August 23, 1996

MEMORANDUM

TO: Orville D. Green, Assistant Administrator

Permits and Enforcement

FROM: Brian R. Monson, Chief //

Operating Permits Bureau

SUBJECT: Issuance of Tier II Operating Permit #001-00112

to Sinclair Oil Corporation (Boise)

PURPOSE

The purpose of this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 of the <u>Rules for the Control of Air Pollution in Idaho</u> (<u>Rules</u>) for issuing Operating Permits.

PROJECT DESCRIPTION

This project is for the issuance of a Tier II Operating Permit (OP) for the Sinclair Oil Corporation (Sinclair) facility, located in Boise, Idaho, in order to establish the facility as a synthetic minor source for hazardous air pollutants (HAPs) and volatile organic compounds (VOCs). As a synthetic minor source of HAPs, the facility will be considered an "area source" for the Bulk Gasoline Distribution MACT standard. Emission sources existing at the facility are as follows: five (5) storage tanks capable of storing gasoline or distillate fuel oil grade petroleum product, three (3) storage tanks to store distillate fuel oil grade petroleum product, one (1) prover tank to verify product shipping and receipt quantities, one (1) storage tank for residual tank and process waste, one (1) double bay submerged top fill loading rack, and process piping fugitive emission sources.

SUMMARY OF EVENTS

On September 12, 1995, DEQ received an application for a Tier II OP. This application was declared administratively complete on October 12, 1995. Additional information was received on November 29, 1995, and on January 10, 1996. On February 13, 1996, a proposed Tier II OP was issued for public comment. A public comment period was then held from February 23, 1996, to March 25, 1996.

On March 19, 1996, and March 21, 1996, DEQ received comments about the content of the proposed OP. These comments were addressed by DEQ in the response package and incorporated into the final operating permit.

On April 29, 1996, DEQ received a formal request for a stay of permit issuance, which was honored. On June 17, 1996, DEQ received a submittal from Sinclair requesting revisions to the original proposed Tier II OP.

RECOMMENDATIONS

Based on the review of the Tier II OP application, additional supporting information submittals, and applicable state and federal regulations concerning the permitting of air pollution sources, the Bureau staff recommends that Sinclair Oil Corporation, in Boise, be issued a Tier II OP. The facility has already submitted the permit application fee of \$500.00 as required by IDAPA 16.01.01.470 of the Rules. Fees pursuant to IDAPA 16.01.01.525 of the Rules will not apply upon permit issuance because the facility will be a non-major source of VOCs.

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cc: J. Palmer, SWIRO
Source File
OP File Manual
COF

August 23, 1996

MEMORANDUM

TO:

Brian R. Monson, Chief Operating Permits Bureau Permits and Enforcement

FROM:

Darrin A. Mehr, Air Quality Engineer

Operating Permits Bureau

Wade C. Woolery, Air Quality Engineer

Technical Services Bureau

THROUGH:

Susan J. Richards, Air Quality Permits Manager /

Operating Permits Bureau

SUBJECT:

Supplemental Technical Analysis for Tier II Operating Permit (#001-00112)

Sinclair Oil Corporation (Boise)

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 of the <u>Rules for the Control of Air Pollution in Idaho</u> (<u>Rules</u>) for issuing Operating Permits.

This memorandum documents the changes in the Tier II Operating Permit's (OP) after the close of the public comment period and revised DEQ policy for issuing permits.

FACILITY DESCRIPTION

Sinclair Oil Corporation's (Sinclair) Boise, Idaho, facility distributes petroleum products received through the Chevron supply pipeline originating in Salt Lake City, Utah. Petroleum products consisting of various grades of gasoline and distillate fuel oil are temporarily stored in tanks prior to transfer to mobile carrier tanks for transport and delivery off-site.

Petroleum products consisting of various grades of distillate fuel oil and gasoline are received by the facility through a pipeline. The petroleum products are stored in any of eight (8) existing storage tanks. Gasoline is allowed to be stored in five of these tanks, and fuel oil can be stored in any of the eight (8) existing tanks. A "prover" tank is used for flow calibration, and a "trans-mix" tank is used to store "slop oil." The petroleum products are transferred from the tanks to the carrier by the loading rack system, prior to off-site transport and delivery.

Storage tanks #401, 404, 411, 421, and 431 are capable of storing any grade of distillate fuel oil as well as gasoline. Storage tanks #402, 405, and 406 can store any grade of distillate fuel oil, but not gasoline.

The carrier is situated in one of the two (2) loading rack bays where one or more loading rack arms are inserted through the fill hatch(es) in the top of the carrier tank. Either a gasoline or a distillate fuel oil product is transferred from the storage tank to the loading rack system, which delivers the product to the carrier tank. Additives may be blended with the gasoline or distillate fuel oil product during loading of the carrier tank.

Fugitive VOC and HAP emissions occur from process equipment including valves, pump seals, flanges, open-end connections, and process drains.

PROJECT DESCRIPTION

This project is for the development of an OP that will create state and federally enforceable limitations on the facility's potential to emit hazardous air pollutants (HAPs), and volatile organic compounds (VOCs). This permit would make the Boise facility a synthetic minor for both HAP and VOC emissions. A synthetic minor HAP source is referred to as an "area source" within the Maximum Achievable Control Technology (MACT) standards. Bulk gasoline distributors recognized as area sources of HAPs avoid the stringent control technology installation requirements of that MACT standard. Issuance of the permit limits VOC emissions below the 100 ton per year (T/yr) major facility threshold. Therefore, this facility will not be subject to Tier I permitting, pollutant registration, and registration fee payments for major facilities.

Refer to the technical memorandum dated February 13, 1996, (Mehr and Woolery through Richards to Monson) for a description of the sources present at the facility.

Sinclair Boise - TECH MEMO August 23, 1996 Page 2

SUMMARY OF EVENTS

On September 12, 1995, the Division of Environmental Quality (DEQ) received an application for a Tier II OP. This application was declared administratively complete on October 12, 1995. Additional information was received on November 29, 1995, and on January 10, 1996. On February 13, 1996, a proposed Tier II OP was issued for public comment. The public comment period started February 23, 1996, and ended on March 25, 1996.

On April 29, 1996, DEQ received a formal request from Sinclair to hold issuance of the Tier II OP. This request was honored by DEQ, and permit issuance was stayed. On June 17, 1996, DEQ received a submittal from Sinclair containing a request for revisions to the original permit.

DISCUSSION

1. Emission Estimates

Emission estimates were originally provided by Sinclair in the September 12, 1995 submittal. Additional supporting calculations and documentation were included in the November 29, 1995, and January 10, 1996, submittals.

The product throughputs for gasoline and distillate fuel oil at the loading rack were altered by Sinclair in the June 17, 1996, submittal. Gasoline throughputs were further discussed with Sinclair to develop an operating scenario to provide maximum operational flexibility. The distillate fuel oil throughputs remained as Sinclair listed in the June 17, 1996, submittal. Annual gasoline throughput was backcalculated using a facility-wide VOC emissions cap of ninety (90) T/yr, resulting in an allowable annual loading rack throughput of 25,500,000 gallons.

Loading Rack Product	Proposed Permit Throughput (U.S. gallons per year)	Revised Throughput (U.S. gallons per year)
Gasoline	233,016,000	25,500,000
Distillate Fuel Oil	337,260,000	570,276,000

Due to the number and nature of assumptions incorporated into the allowable emissions analysis, Sinclair agreed to an annual VOC emissions cap of approximately ninety (90) tons per year (T/yr). Gasoline with an RVP of 11 psia more closely represents the allowable annual average of 10.9 psia, and provides worst case annual average VOC emission estimates. Therefore, RVP 11 gasoline physical properties will be used for the final Boise facility OP (refer to the February 13, 1996, technical memorandum (Mehr and Woolery through Richards to Monson), for a comparison of the different gasoline RVP cases.

Physical properties for RVP 11 gasoline were not incorporated for the Transmix, Prover and #431 tanks. Emission estimates for the storage tanks did not vary greatly when comparing emissions for RVP 11 versus RVP 10 gasoline.

Emission Estimates Conclusions

Daily throughput limits as listed in the February 13, 1996, technical memorandum will not be incorporated. Hourly emission limits were developed using the rated capacity of the emissions units/processes and the methodology is the same as for the Burley facility's June 17, 1996, submittal. The goal of the Tier II permit was intended to limit only the annual emissions of pollutants. No ambient air quality impacts were assessed for the facility, as the Permittee has stated all emissions units covered in the permit qualify as grandfathered sources, and this project is not for a modification.

Facility-wide annual potential emissions are:

POLLUTANT	POTENTIAL EMISSIONS (Tons per year)
Volatile Organic Compounds (VOCs)	89.95
Aggregated Hazardous Air Pollutants (HAPs)	2.54
Individual HAPs: Benzene	0.44
Ethylbenzene	. 0.063
Hexane	0.69
Naphthalene	0.0051
Toluene	0.74
Trimethylpentane 2,2,4 (Iso-Octane)	0.17
Xylenes (meta-, ortho-, and para-)	0.43

Appendix A of the proposed Tier II OP originally contained individual HAP emission limits for hexane and toluene to demonstrate that the ten (10) T/yr major source threshold for single HAP emissions were not encroached upon. Hexane and toluene were the largest single HAP emissions in comparison to the other HAPs inventoried. These limits have been dropped from Appendix A of the final permit because the emission levels have been drastically reduced, and an aggregated HAPs emission limit will suffice.

Revisions to Proposed Permit Due to Supplemental DEQ Review

Equipment and emissions control devices and methods listed in the permit originally issued for public comment have been removed in accordance with current Department permitting methods. These items are listed here to document the existing sources and provide a basis for determining the facility's potential emissions.

The following section contains the information deleted from the proposed Tier II OP.

<u>Storage Tanks</u>

Tanks #401, #404, #421, and #431 are allowed to store either gasoline or any grade of distillate fuel oil. Tanks #401, #404, #411, and #421 are sixty (60) feet in diameter and each has a storage capacity of 839,400 gallons. Tank #431 is 110 feet in diameter and has a storage capacity of 3,336,800 gallons. VOC and HAP emissions are controlled by an external floating roof.

Tanks #402, #405, and #406 are allowed to only store any grade of distillate fuel oil, and each tank is sixty (60) feet in diameter and has a storage capacity of 839,800 gallons. These tanks have a fixed roof, and VOC and HAP emissions are uncontrolled.

Additional tanks at the facility include the Trans-mix and Prover tanks. Each of these tanks has a fixed roof, and emissions are uncontrolled. The proposed Tier II OP contained VOC and HAP emission limits on the Trans-mix tank. No monitoring of product throughput was to be required for this source because an undetermined amount of total throughput is water and other process wastes. Emission estimates for the Trans-mix tank are:

- VOCs: 0.05 lb/hr and 0.21 T/yr
- Aggregated HAPs: 0.001 lb/hr and 0.005 T/yr

Loading Rack

The loading rack has two (2) bays. Carrier tanks are filled using one or more dispensing arms into fill hatches at the top of the tank. Petroleum products are transferred from storage tanks to carrier tanks using a submerged fill method.

<u>Fugitives</u>

Fugitive VOCs and HAPs are emitted from equipment at the facility. Fugitive VOC emissions were estimated to be 0.25 lb/hr and 1.07 T/yr. Fugitive aggregated HAP emissions were estimated to be 0.023 lb/hr and 0.121 T/yr. The documentation of emission factors is contained in the February 13, 1996, proposed Tier II OP's technical memorandum.

The following equipment was included in the analysis:

Gasoline Service
Pump Seals: 7
Valves: 103
Flanges: 230
Process Drains: 1
Oil/Water Separator: 0

Distillate Fuel Oil Service
Pump Seals: 4
Valves: 103
Flanges: 145
Process Drains: 0
Oil/Water Separator: 0

Summary of Changes Made to Proposed Permit

- Allowable distillate fuel product throughput increased, and gasoline decreased at loading rack.
- Allowable loading rack VOC and HAP emissions decreased by reduction of the gasoline throughputs.
- Individual HAPs emission limits removed from Appendix A of the OP.

Monitoring Requirements

Monitoring requirements for the purpose of demonstrating compliance with the annual emissions limits for the facility will consist only of monitoring of the type of product (gasoline or distillate fuel oil) and the number of gallons of each substance transferred from the supply pipeline to the storage tanks, and the amount in gallons transferred for off-site delivery through the loading rack. The product information must be monitored and recorded contemporaneously as the products are received and transferred to storage tanks, and as the products are transferred through the loading rack to off-site delivery vehicles. There are no specific daily throughput restrictions at either the loading racks or the storage tanks. Rather, the short-term emission limits are based upon the hourly capacity of equipment and the physical properties of the petroleum products. There is no feasible method for Sinclair to document compliance with the short-term emission limits. The variability in gasoline volatility, as well as seasonal temperature and throughput variations, lends itself to verification that the annual emissions limits are complied with by the facility.

For this reason, the facility will be required to monitor and record the product throughputs contemporaneously with the transfer to storage tanks and from the loading rack. This information is to be compiled on a monthly basis, and the monthly throughput totals will be compared to the twelve (12) month allowable product throughputs. Compliance will be determined on a twelve (12) month rolling summation basis, thus providing a method for determining compliance with the OP's allowable emissions for any twelve (12) month period (established after the first twelve (12) month period). This method of compliance demonstration should not place undo burdens on Sinclair, as the amounts of product received and transferred are already monitored for internal inventorying purposes.

Sinclair will not be required to monitor the Reid Vapor Pressure and individual HAPs for this permit, because the applicant and the Department have not utilized a variable RVP and HAP content approach in developing the permit emission limits. More stringent monitoring requirements are not necessary because the ninety (90) T/yr facility-wide emissions cap provides a level of confidence that the cap will not be exceeded, as long as the Permittee abides by the annual throughput restrictions.

The semi-annual reporting requirement (established due to public comment) has been retained in the final OP.

Sinclair Boise - TECH MEMO August 23, 1996 Page 5

2. Modeling

No modeling was performed to assess the ambient air quality impacts of this facility.

3. Area Classification

Sinclair's Boise facility is located within the Northern Ada County Nonattainment Area, which is designated as a "moderate" nonattainment area for particulate matter with a mean aerodynamic diameter of ten (10) microns or less (PM_{10}) and carbon monoxide (CO). This area is designated as either in attainment or unclassifiable for all other criteria air pollutants (NO_x , SO_x , and VOCs).

The facility is located AQCR 64, Zone 11.

4. Facility Classification

The facility is not a designated facility as defined by IDAPA 16.01.01.006.25 of the <u>Rules</u>. (Petroleum storage capacity of the facility is approximately 5.834 million gallons. Designated facility threshold is 12.6 million gallons storage capacity).

The facility is classified as an A2 source due to permitted VOC emission limits below 100 T/yr, and permitted HAP emissions below ten (10) T/yr single HAP and twenty-five (25) T/yr aggregated HAP major source thresholds.

5. Regulatory Review

This Tier II OP is subject to the following regulatory requirements:

a.	IDAPA 16.01.01.006 & 7	Definitions
b.	IDAPA 16.01.01.401	Tier II Operating Permit
c. d.	IDAPA 16.01.01.403	Permit Requirements for Tier II Sources
	IDAPA 16.01.01.404.01	Opportunity for Public Comment
e. f.	IDAPA 16.01.01.404.01(c)(v)	Consideration of Comments and Final Action
f.	IDAPA 16.01.01.404.04	Authority to Revise or Renew Operating
		Permits
g.	IDAPA 16.01.01.406	Obligation to Comply
g. h.	IDAPA 16.01.01.470	Permit Application Fees for Tier II Permits
i.	IDAPA 16.01.01.650	General Rules for the Control of Fugitive
		Dust
j.	IDAPA 16.01.01.728	Sulfur Content Limit for Distillate Fuel
		Oil
k.	Section 37-2506.Idaho Code	Quality Standards for Motor Gasoline and
		Distillate Fuel Oil-Specifications Set By
		American Society of Testing and Materials
1.	40 CFR Part 80.27	Controls and Prohibition on Gasoline
		Volatílíty
		· · · · · · · · · · · · · · · · · · ·

FEES

Fees apply to this facility in accordance with IDAPA 16.01.01.470 of the <u>Rules</u>. The facility is subject to permit application fees for Tier II permits in the amount of five hundred dollars (\$500.00). Sinclair has already submitted this payment to DEQ with the application. With the issuance of this permit, Sinclair's Boise facility will no longer be subject to registration fees for major facilities, required by IDAPA 16.01.01.525 of the <u>Rules</u>.

RECOMMENDATIONS

Based on the review of the Tier II OP application materials and of applicable State of Idaho and federal regulations concerning the permitting of air pollution sources, the Bureau staff recommends that Sinclair Oil Corporation, in Boise, Idaho, be issued a Tier II OP for the sources that exist at the facility. An additional opportunity for public comment on the air quality aspects of the permit is not required. All memoranda for the project shall be provided to the public and facility for this final action.

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cc: J. Palmer, SWIRO Source File

Attachment A Revised Emission Estimation Spreadsheet

Project Engineer:

DM

90 TONYR ALLOWABLE VOCs CAP

Company Name:

Sinclair Oil Corp. Boise, Idaho THIS SPREADSHEET IS MODIFIED TO REFLECT THE REVISED LOADING RACK THROUGHPUTS

Location: Date Created:

January 4, 1996

from SINCLAIR OIL CORPORATION from "Submittal of Revised Allowable Emissions" letter received on June 17, 1996 (Samuel B. Greene, P.E. to Orville D. Green) and maximum flexibility.

Today's Date:

07/23/96

CHANGES: Loading Rack Fuel Throughputs: Gasoline Decreased to 25,500,000 gallons per year

Distillate Fuel Oil Increased to 570,276,000 gallons per year

BOISE, IDAHO FACILITY

RVP 11 Gasoline CASE

Calculation of Loading Rack Emissions

ASSUMPTIONS

- TANKS2.0 provides the monthly average true vapor pressure of the gasoline product AND the molar fraction of HAP constituents
 in the vapor phase of the gasoline product,
- 2. Trimethylpentane 2,2,4 is also known as Iso-octane.
- 3. Discussions with EPA Region X and the resulting discussions between EPA Region X and Research Triangle Park reveal that gasoline emissions of the three Xylene isomers should be aggregated under a heading of Xylene (mixtures).
- 4. The most vital assumption made with this analysis is that it assumes an identical chemical composition throughout the year. The most accurate method for estimating all emissions would be to have samples of gasoline chemical composition for EACH of the different Reid Vapor Pressure (RVP) categories. RVP is determined by chemical composition physical properties. Therefore, the acceptance of a single gasoline chemical composition is an important assumption. The applicant has further stated that this information would be difficult, if not impossible, to deliver because they may receive gasoline product from refineries other than their own corporation's.
- 5. Worst case HAP emissions occur for a constant RVP 10 psia gasoline product. However, the overall goal of the Boise facility has changed. VOCs and HAPs must both be limited below major source applicability thresholds. RVP 11 is the worst case for estimating VOC emissions. VOCs will be the pollutant that are closest to the major source threshold. RVP 11 will be used to establish permit allowable emissions for the loading rack. Emissions for storage tanks do not increase significantly when RVP 10 and RVP 11 emissions are compared. Note that only the information for Tanks 401, 404, 411, and 421 were altered to reflect casoline with an RVP of 11 psia.

ANNUAL LOADING RACK EMISSIONS using an ANNUAL AVERAGE MOLE FRACTION **GASOLINE SERVICE**

Lt = 12.46 SPM/T

where LL = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure of liquid delivered, psia

M = molecular weight of vapor, lb/lb-mole

T = absolute bulk liquid temperature, *R

L.= see Chart S = see 1.00 3.54 M # 65.16 511.1

25500.0 E^3 gallons

570276,0 E^3 gallons

These vapor mole fractions represent Gasoline RVP 11 at Boise conditions 'An annual average of 10.9 pain is the allowable RVP as set by ASTM D-4814-95a ASTM D-4814-85e is the applicable standard for all bulk gasoline distributors for the Reid Vapor Pressure of gasoline distributed within the State of Idaho.

ANNUAL Gasoline Throughout, gallons per year =

ANNUAL DVD 44 FOR ALLOWARIES

HAP*	Mole	Lı	Emissions
Compounds	Fraction	(lb/10 ; gal)	(Ton/YEAR)
Benzene	0.0051	0.0287	0,365
Ethylbenzene	0.0005	0.0028	0.035
Hexane	0.0081	0.0455	0,580
Naphthalene	0.0000	3.35E-06	0.000
Toluene	0.0072	0.0405	0.516
Frimethylpentane (2,2,4)	0.0019	0.0107	0.136
Xylene-m	0.0013	0.0073	0.093
Xylene-o	0.0005	0.0028	0.035
Xylene-p	0.0010	0.0056	0.071
Gasoline (RVP-11)	0.9745	5,4779	69,843

TOTAL TOTAL-HAPS ONLY

71.6784 1.8348

DISTILLATE FUEL OIL SERVICE

LL = 12.46 SPM/T

where Li = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0 P = true vapor pressure of liquid delivered, psia

M = molecular weight of vapor, lb/lb-mole

T = absolute bulk liquid temperature . *R

see Chart LE-# S = see 1.00 Pe 0.0053 M = 129.04 T = 511.1

ANNUAL Distillate Fuel Oil Throughput, gallons per year =

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HAPs	Mole	Lı	Emissions
Compounds	Fraction	(lb/10 3 gal)	(Ton/YEAR)
Naphthalene	0.0005	8.34E-06	0.0024
Toluene	0.0102	0.0002	0.0485
Xy lene- m	0.0115	0.0002	0.0547
Xylene-o	0.0031	0,0001	0.0147
Xylene-p	0.0000	0.0000	0.0000
Distillate Fuel Oil #2	0.9747	0.0163	4,6335
TOTAL	1,0000		4.7538
TOTAL-HAPS ONLY	**************************************		0.1203

XYLENE (mixture) 0.0694 tons per year

XYLENE (mixture) 0.2007 tons per year

TYPICAL STORAGE TANK EMISSIONS

Emissions are estimated using TANKS2 and are for a SiNGLE storage tank, except as noted.

Storage tank emissions are comprised of: Withdrawai, roof-fitting, rim-seal, and standing losses. Gasoline Storage Tanks

RVP 11 Gasoline

Tanks 401, 404, 411, 421

Alika 401, 404, 411, 421		
	Hourly	Annual
. HAPs	Emissions	Emissions
Compounds	(lb/hr)	(Ton/YEAR)
Benzene	0,0030	0.0131
Ethylbenzene	0.0007	0.0030
Hexane	0.0045	0.0198
Naphthalene	0.0000	0,0001
Toluene	0.0057	0.0250
Trimethylpentane (2,2,4)	0.0013	0.0056
Xylene-m	0.0016	0.0069
Xylene o	0.0010	0.0044
Xylene-p	0.0014	0.0062
Gasoline (RVP-11)	0.4639	2.0320
TOTAL VOCS	0.483	2.1160
TOTAL-HAPS ONLY	0.019	0.0840

For the four (4) Tanks:		
TOTAL VOC\$	1.932	8.4641
TOTAL-HAPS ONLY	0.077	0.3361

Tank 431

	Hourly	Annual
HAPs	Emissions	Emissions
Compounds	(lb/hr)	(Ton/YEAF
Benzene	0.0028	0.0124
Ethylbenzene	0.0005	0.0021
Hexane	0.0044	0.0192
Naphthalene	0.0000	0.0001
Toluene	0.0048	0.0212
Trimethylpentan	0.0011	0.0050
Xylene-m	0.0012	0.0051
Xylene-o	0.0007	0.0030
Xylene-p	0.0010	0.0044
Gasoline (RVP-	0.4614	2,0208
TOTAL VOCS	0.4779	2.0933
TOTAL-HAP8	0.0166	0.0725

Note: The use of Gasoline RVP 11 versus RVP 10 results in a negligible change in emissions. Therefore TANKS 2.0 will not be reinvestigated for Tanks 431, Transmix and Prover.

Tanks Transmix and Prover

Emissions are nearly identical (per applicant's submittal) to each other

so the Transmix Tank results will be used for both tanks.

	Hourly	Annual
HAP*	Emissions	Emissions
Compounds	(lb/hr)	(Ton/YEAR)
Benzene	0.0003	0.0012
Ethylbenzene	0.0000	0,0001
Hexane	0.0004	0.0019
Naphthalene	0,0000	0.0000
Toluene	0.0001	0.0003
Trimethylpentane (2,2,4)	0.0001	0,0005
Xylene-m	0.0001	0.0003
Xylene-o	0.0000	0.0001
Xylene-p	0.0001	0.0002
Gasoline (RVP-10)	0.0478	0.2093
TOTAL VOCS	0.0488	0.2139
TOTAL-HAPS ONLY	0.0011	0.0047

For the two (2) Tanks:

TOTAL VOCs	0.0977	0.4279
TOTAL-HAPS ONLY	0.0021	0.0094

DISTILLATE FUEL OIL STORAGE TANKS

TANKS 402, 405, 406

	Hourly	Annual
HAP*	Emissions	Emissions
Compounds	(lb/hr)	(Ton/YEAR)
Naphthalene	0.0001	0.0003
Toluene	0.0011	0.0049
Xylene-m	0.0013	0,0057
Xylene-o	0.0004	0.0015
Distillate Fuel Oil #2	0.1085	0.4752
TOTAL VOCS	0.1113	0.4876
TOTAL-HAPS ONLY	0.0028	0.0124

For the three (3) Tanks:

7 7. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.		
TOTAL VOCs	0.3340	1.4628
TOTAL-HAPS ONLY	0.0085	0.0371

STORAGE TANK SUMMARY

	Hourly	Annual
HAPs	Emissions	Emissions
Compounds	(lb/hr)	(Ton/YEAR)
Benzene	0.0153	0.0672
Ethylbenzene	0.0033	0.0143
Hexane	0.0234	0.1024
Naphthalene	0.0003	0.0014
Toluena	0.0312	0.1365
Trimethylpentane (2,2,4)	0.0065	0.0284
Xylene-m	0.0115	0.0503
Xylene-o	0.0058	0.0252
Xylene-p	0.0068	0.0296
Gasoline OR Fuel Oil	2.7381	11.9929
TOTAL VOCs	2.8420	12.4481
TOTAL-HAPS ONLY	0.1039	0.4551

Xylenes (mixture)

0.1051 Tons/yr

FUGITIVE EMISSIONS

Bolse Facility

Notes and Comments: (Response to Comment)

- 1. The application did in fact account for fugitive emissions occurring for 8760 hours/year.
- 2. Emissions will be estimated using the revised emission factors from the EPA Protocol for Equipment Leak Emission Estimates, November, 1995. EPA-453/R-95-017. Sinclair Oil Corp, has requested in public comment that these be used in place of the 1995 "Interim" Average Emission factors that were used to establish emission limits in the proposed permit. Those emission factors are incorporated below. Result: There is no appreciable difference between the two sets of emissions factors, as the emission factors are either identical or very close in numerical value.
- 3. The number of emissions sources is provided by the applicant.

, , , , , , , , , , , , , , , , , , ,		Emission	Total VOC	Assumed	Total VOC
		Factor	Emissions	Hours/yr	Emissions
SOURCE	# of Sources	(lb/hr/source	(lb/hr)	Operation	(Tons/year)
GASÖLINE (light liquid):					
Pump Seals	7	1.2E-03	800.0	8760	0.037
Valves	103	9.5E-05	0.010	8760	0.043
Flanges	230	1.8E-05	0.004	8760	0.018
Process Drains *1	1	0.07	0.070	8760	0.307
Oil/Water Separator	0	1 1	0.000	8760	0.000
	1	Lb/hr totals:	0,092	Ton/yr total	0,404
DISTILLATE FUEL OIL					
(heavy liquid) *2					
Pump Seals	4	2.9E-02	0.115	8760	0.502
Valves	58	5.5E-05	0.003	8760	0.014
Flanges	145	2.4E-04	0.035	8760	0.154
Process Drains *1	0	0.07	0.000	8760	0,000
Oil/Water Separator	0		0.000	8760	0.000
	•	Lb/hr totals:		Ton/yr total	

Fugitive Grand Total (

0.25 lb/hr

1.07 Ton/yr

HAP Emissions = VOC Emission Rate * HAP Liquid Mass Fraction

^{*1} Emission factor for the drain is from AP-42 Table 9.1-2 Fugitive Emission Factors for Petroleum Refineries, October/1980

^{*2} Distillate fuel oil emission factors are from the August 1995 AP-42 Interim Emission Factors for Oil and Gas Production Operations

FUGITIVE HAP EMISSIONS (Gasoline Service)

HAP Component	Liquid Mass Fraction	VOC Emis Rate (lb/hr)	Rate	VOC emis Rate (Tons/year)	HAP Emission Rate (Tons/year)
Benzene	0.0188	0.0017	0.0017	0.0076	0.0076
Ethylbenzene	0.0207	0.0017	0.0019	0.0070	0.0084
Hexane	0.0181	0.0017	0.0017	0.0073	0.0073
Naphthalene	0.0013	0.0001	0.0001	0.0005	0,0005
Toluene	0.0972	0,0090	0.0090	0.0393	0,0393
Trimethipentane 2.2.4	0.0151	0.0014	0.0014	0,0061	0.0061
Xylene (-m)	0.0448	0.0041	0.0041	0.0181	0.0181
Xylene (-o)	0.0349	0.0032	0.0032	0.0141	0.0141
Xylene (-p)	0.0448	0.0041	0.0041	0.0181	0.0181
Gasoline (RVP 10)	0.7043	0.0650	0.0000	0.2848	0.0000
Totals:	1.0000	0.0923	0.0273	0.4044	0.1196

FUGITIVE HAP EMISSIONS (Distillate Fuel Oil Service)

HAP Component	Liquid Mass Fraction		HAP Emission Rate (lb/hr)	VOC Emis Rate (Tons/year)	HAP Emission Rate (Tons/year)
Benzene	0.000028	0.000004	0.000004	0.000019	0.000019
Naphthalene	0.001700	0.000260	0.000260	0.001139	0.001139
Toluene	0.000200	0.000031	0.000031	0.000134	0.000134
Xylene (-m)	0.000300	0.000046	0.000046	0.000201	0.000201
Xylene (-o)	0.000600	0.000092	0.000092	0.000402	0.000402
Xylene (-p)	0.000000	0.000000	0.000000	0.000000	0.000000
Distillate Fuel Oil #2	0.997172	0.152567		0.668242	ļ
Totals:	1,0000	0.1530	0.00043	0.6701	0.0019

Emissions and Allowable Throughput Summary - Boise, Idaho Facility RVP 11 Gasoline to Establish Worst Case VOC Emissions

SOURCE		ALLOWABLE	EMISSIONS	ALLOWABLE		
IDENTIFICATION	Volatile O	egated	THROUGHPUT	Allowable Product		
	Comp		Hazardous A	ir Poliutants		Туре
	(lb/hr)	(Tons/yr)	(lb/hr)	(Tons/yr)	(Gallons/yr)	
STORAGE TANKS				:		
Tank 401	0.4831	2.1160	0.0192	0.0840	58,254,000	Gasoline '
Tank 404	0.4831	2.1160	0.0192	0.0840	58,254,000	Gasoline
Tank 411	0.4831	2.1160	0,0192	0.0840	58,254,000	Gasoline
Tank 421	0.4831	2.1160	0.0192	0.0840	58,254,000	Gasoline
Tank 431	0.4779	2.0933	0.0166	0.0725	58,254,000	Gasoline
	2.410	10.657	0.093	0.409	,,,	
Tank 402	0.1113	0.4876	0.0028	0.0124	168,630,000	Distillate Fuel Oil
Tank 405	0.1113	0.4876	0.0028	0.0124	168,630,000	Distillate Fuel Oil
Tank 406	0.1113 0.334	0,4876 1.463	0.0028 0.008	0.0124 0.037	168,630,000	Distillate Fuel Oil
Transmix Tank 400	0.0488	0.2139	0.0011	0.0047	38,080	Gasoline
Prover Tank	0.0488 0.098	0.2139 0.428	0.0011 0.002	0.0047 0.009	220,200	Gasoline
LOADING RACK						
Gasoline Service	16.3649	71.6784	0.4189	1.8348	25,500,000	Gasoline
Distillate Fuel Oil Service	1.0853 17.450	4.7 <u>538</u> 76.432	0.0004 0.419	0.0019 1.837	570,276,000	Distillate Fuel Oil
FUGITIVES		j				
Gasoline Service	0.0923	0.4044	0.0273	0.1196	N/A	
Distillate Fuel Oil Service	0.1530 0.245	0.6701 1.075	0.0004 0.028	0.0019 0.121	N/A N/A	
Total Emissions:	20.54	89.95	0.55	2.41		

N/A stands for Not Applicable USING: RVP 11 GASOLINE

Annual storage tank emissions are derived from the EPA/API TANKS2.0 program.

06/28/96 PAGE 1

TANKS PROGRAM 2.0 EMISSIONS REPORT - DETAIL FORMAT TANK IDENTIFICATION AND PHYSICAL CHARACTERISTICS

Identification Typical of Tanks 404, 411, 421 Identification No.: 401 RVP 11 City: Boise State: IĐ Company: Sinclair Oil Corp. Type of Tank: External Floating Roof Tank Dimensions Diameter (ft): 60 Volume(gallons): 839400 Turnovers: 69 Paint Characteristics Shell Condition: Light Rust Shell Color/Shade: White/White Shell Paint Condition: Good Roof Characteristics Roof Type: Double Deck Fitting Category: Typical

Tank Construction and Rim-Seal System Construction: Welded Primary Seal: Mechanical Shoe

Secondary Seal: Rim-mounted

Roof Fitting/Status	Quantity
Vacuum Breaker (10-in. Diam. Well)/Weighted Mech. Actuation, Gask. Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1 1
Roof Leg (3-in. Diameter)/Adjustable, Double-Deck Roofs Roof Drain (3-in. Diameter)/Open	10 1
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask. Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask	1
Gauge-Float Well (20-in. Diam.)/Unbolted Cover, Ungask. Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1

Meteorological Data Used in Emission Calculations: Boise, Idaho

TANKS PROGRAM 2.0 EMISSIONS REPORT - DETAIL FORMAT LIQUID CONTENTS OF STORAGE TANK

Mixture/Component	Month		atures	Surf. (deg f) Max.	Liquid Bulk Temp. (deg f)	,	Pressures Min.	(psia) Max.		Liquid Mass Fract.	Mass	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline RVP 11	ALL	53.12	47.11	59.13	51.12	3.9508	N/A	. H/A	65.164				
Gasoline - Unleaded (RVP 11)						4.9520	H/A	N/A		0.7043	0.9745	64.70	Option 4: RVP=11.00, ASTM Slope=2.5
Benzene						0.9620	N/A	N/A	L.	0.0188	0.0051	78.11	Option 2: A=6.9050, B=1211.033, C=220.790
Ethylbenzene						0.0851	N/A	N/A		0.0207	0.0005	106.17	Option 2: A=6.9750, B=1424.255, C=213.210
Hexane (-n)						1.5952		•		0.0181			Option 2: A=6.8760, B=1171.170, C=224.410
Isooctane						0.4472				0.0151	0.0019		Option 1
Naphthalene C-10, H-8						0.0017				0.0013	0.0000		Option 2: A=7.1463, B=1831.571, C=211.821
Toluene								-		0.0972			Option 2: A=6.9540, B=1344.800, C=219.480
						0.2655		-					
Xylene (-m)						0,1018	N/A	. N/A	l.	0.0448			Option 2: A=7.0090, B=1426.266, C=215.110
Xylene (-o)						0.0553	N/A	. N/A	ì	0.0349	0.0005	106.17	7 Option 2: A=6.9980, B=1474.679, C=213.690
Xylene (-p) "Paraxylene"						0.0763	H/A	H/A	i .	0.0448	0.0010	106.16	Option 2: A=7.0206, B=1474.403, C=217.773

TANKS PROGRAM 2.0 EMISSIONS REPORT - DETAIL FORMAT DETAIL CALCULATIONS (AP-42)

Annual Emission Calculations

Rim Seal Losses (1b):	537.3851
Seal factor (lb-mole/ft yr (mph)^n):	0.2000
Average Wind Speed (mph):	8.8
Seal-related Wind Speed Exponent:	1.00
Value of Vapor Pressure Function:	0.0781
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	3.950752
Tank Diameter (ft):	60
Vapor Molecular Weight (lb/lb-mole):	65.163778
Product Factor:	1.0000
Withdrawal Losses (ib):	179.6465
Annual Net Throughput (gal/yr):	58254360
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	0.0000
Tank Diameter (ft):	60
Roof Fitting Losses (lb):	3972.4164
Value of Vapor Pressure Function:	0.0781
Vapor Molecular Weight (lb/lb-mole):	65,163778
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	780.6081
Average Wind Speed (mph):	8.8

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa (lb-mole/yr) KFb (lb-mole/(yr mph^n)) m				
Vacuum Breaker (10-in. Diam. Well)/Weighted Mech. Actuation, Gask.	1	1.20	0.17	1.00		
Unslotted Guide-Pole Well/Ungasketed Sliding Cover	1	0.00	67.00	0.98		
Roof Leg (3-in. Diameter)/Adjustable, Double-Deck Roofs	10	0.25	0.07	1.00		
Roof Drain (3-in. Diameter)/Open	1	0.00	7.00	1.40		
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1	0.71	0.10	1.00		
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask	1	0.95	0.14	1.00		
Gauge-Float Well (20-in. Diam.)/Unbolted Cover, Ungask.	1	2,30	5.90	1.00		
Access Hatch (24-in. Dism.)/Bolted Cover, Gasketed	1	0.00	0.00	0.00		

Total Losses (lb):

4689.45

TANKS PROGRAM 2.0 EMISSIONS REPORT - DETAIL FORMAT INDIVIDUAL TANK EMISSION TOTALS

Annual Emissions Report

	Losses (lbs	:.):					
- • • • -	Total		Total				
Liquid Contents	Withdrawal	Roof-Fitting	Rim-Seat	Standing	Totat		
Gasoline RVP 11	179.65	3972.42	537.39	4509.80	4689.45		
Gasoline - Unleaded (RVP 11)	126.53	3871.19	523.69	4394.88	4521.41		
Benzene	3,38	20.07	2.72	22,79	26.17		
Ethylbenzene	3.72	1.95	0.26	2,22	5.94		
Hexane (-n)	3,25	32.05	4.34	36.38	39.64		
Isooctane	2.71	7.50	1.01	8.51	11.22		
Naphthalene C-10, H-8	0.23	0.00	0.00	0.00	0.24		
Toluene	17.46	28.65	3.88	32.52	49.98		
Xylene (-m)	8.05	5.06	0.69	5.75	13,80		
Xylene (-o)	6.27	2.14	0.29	2.43	8.70		
Xylene (-p) "Paraxylene"	8.05	3.80	0.51	4.31	12.36		
Total:	179.65	3972.42	537.39	4509.80	4689.45		

Response to Comments and Questions Submitted During a Public Comment Period on Sinclair Oil Corporation (Boise) Proposed Tier II Operating Permit (OP) for the Entire Facility

COMMENTS AND RESPONSES

Comment #1:

Sinclair's calculations showed HAP emissions at the 25 tons/year limit. DEQ's recalculation of emissions using different factors allows Sinclair to be permitted under the 25 tons/year limit. In light of the fact that Sinclair is close to being designated a major source by all calculations and that DEQ used many of Sinclair's assumptions regarding vapor pressures and HAP compositions of gasoline in their analysis the city believes that a more stringent reporting requirement is prudent.

We would recommend that Sinclair's throughput records be compiled and submitted to DEQ twice a year for review. The data should be summarized with the details provided as support, so that the throughputs can be compared to the permitted levels. This requirement should not create large additional demand on Sinclair or on DEQ. Additionally, the requirement will allow for timely evaluation of compliance with their Tier II permit. We also recommend this approach due to the proximity of the facility to a residential care center, a school, and hospital. Assurance of public health production should be of utmost concern for the issuance of this permit

DEC Response:

DEQ's calculations of the potential to emit HAPs utilizes the most recent information and emissions factors available from the Environmental Protection Agency (EPA). The resulting limitation on the facility's potential to emit HAPs is below the required 10 tons per year (T/yr) of any individual HAP, and the 25 T/yr threshold for aggregated HAPs emissions. Thus, this facility has established itself as a non-major facility for HAPs. The facility is a major source of volatile organic compounds (VOCs).

The City of Boise is correct in that a large number of buildings occupied by sensitive receptors have been allowed to be built near this industrial source. DEQ will incorporate the City of Boise's request that Sinclair Oil Corporation submit semi-annual reports to DEQ's Central Office for review of compliance with petroleum product throughput limitations in Tier II Operating Permit #001-00112. The information required to be monitored, recorded, and then compiled on a monthly basis in Section 4.1 on page 3 of 10 (Storage Tanks), and Section 4.1 on page 5 of 10 (Loading Rack), shall be compiled for six (6)consecutive months, and submitted to DEQ for review. Therefore, Section 5, Reporting Requirements, on the permit pages listed above will be altered to reflect this reporting requirement.

These reports shall be reviewed to determine compliance with the annual throughput and emission limits in the operating permit. However, this reporting requirement does not supersede DEQ's ability to determine compliance with the permit's limitations on a monthly basis, rather than a semiannual basis. As a major source of VOCs, this facility will undergo an annual inspection by DEQ. Inspection of the facility may or may not coincide with the submittal of these reports. It is important to note that a compliance determination with the annual rolling limitation can be established monthly (as soon as either an entire year of data is compiled), or non-compliance can be established prior to the compilation of an entire year of data in the event the data shows that the annual limitation has been exceeded.

Any requests for treatment of the information as "confidential" must follow the substantive and procedural requirements outlined in IDAPA 16.01.01.126 of the Rules for the Control of Air Pollution in Idaho (Rules), and Idaho Code 39-111.

Comment #2:

Fugitive Emissions: The fugitive emission calculation submitted with the Permit application was based upon Refinery Average Emission Factors applied at 8,760 hours per year. Subsequent to Permit application submittal, the protocol document has been revised. The new revision includes Marketing Terminal Average Emission Factors which are directly applicable to fugitive sources in light liquid (i.e., gasoline) service. Soc believes these factors more accurately reflect the fugitive emissions from light liquid service at this facility. Inclusion of the new factor significantly reduces the fugitive VOC and HAP emission from the facility and SOC supports the use of these factors for this application. The Division's technical analysis utilized "Interim" Emissions Factors for light liquid service which correspond closely to the Marketing Terminal Average Emission Factors.

With regard to emissions from fugitive sources in heavy liquid (i.e., fuel oil) service, neither the Interim factors nor the Marketing Terminal Average Emission Factors include corresponding factors for fuel oil service. The Division utilized "light oil" from Average Emission Factors for Oil and Gas Production Operations for the fuel oil emission factors. Sinclair is concerns with the use of the "Oil and Gas Production" factors for fuel oil service because these factors result in a higher emissions (lb/hr/source) than the corresponding gasoline service factors.

Fugitive emissions from gasoline service tend to be greater than fugitive emissions from fuel oil service. Sinclair also recognizes that more accurate factors may not yet be developed for the fuel oil service application. Although the fuel oil service factors used in the technical analysis overpredict fugitive fuel oil emission, thus providing a conservative estimate of these emissions, Sinclair agrees with the Division's assessment of fugitive emissions from fuel oil service.

DEO Response:

Gasoline Service

Sinclair is correct in stating that the original permit application estimated fugitive volatile organic compounds (VOCs) and hazardous air pollutant (HAPs) emissions continuously—or 8760 hours per year.

The 1993 EPA Protocol for Equipment Leak Emission Estimates¹ (1993 Protocol) was used to set emission limits in the permit application. The 1995 "Interim" emission factors² used to establish the proposed permit's emission limits were much smaller than those in the 1993 Protocol. This accounted for a lower level of allowable fugitive emissions in the proposed permit than originally applied for.

The "Interim" emission factors for pump seals, valves, and flanges in light liquid (gasoline) service are either identical, or nearly so, when compared to the Marketing Terminal Average Emission Factors, published in the 1995 Protocol³. Fugitive emissions from gasoline service were recalculated using the 1995 Protocol emission factors (see attachment). The difference in estimated fugitive emissions was negligible. Therefore, the allowable pollutant emissions permit limits and gasoline throughput limits will remain unchanged.

Distillate Fuel Oil Service

DEQ agrees with Sinclair's comment that fugitive emissions from gasoline service should be greater than for distillate fuel oil service. At the present time there are no Marketing Terminal Average Emission factors for distillate fuel oil service. In the absence of actual screening values for the distillate fuel oil service emission sources, DEQ maintained that the apparently conservative emission factors used in the proposed permit's analysis, was the only option available. The final result and goal of this Tier II Operating Permit is to establish the facility as a "synthetic minor" for HAPs emissions.

Protocol for Equipment Leak Emission Estimates, EPA-453\R-93-026, June 1993, USEPA.

New Equipment Leak Emissions Factors for Petroleum Refineries, Gasoline Marketing and Oil and Gas Production Operations, February 1995, USEPA.

Protocol for Equipment Leak Emission Estimates, EPA-453\R-95-017, November 1995, USEPA.

FUGITIVE EMISSIONS

Bolse Facility

Notes and Comments: (Response to Comment)

- 1. The application did in fact account for fugitive emissions occurring for 8760 hours/year.
- 2. Emissions will be estimated using the revised emission factors from the EPA Protocol for Equipment Leak Emission Estimates, November, 19 EPA-453\R-95-017. Sinclair Oil Corp. has requested in public comment that these be used in place of the 1995 "Interim" Average Emission factors that were used to establish emission limits in the proposed permit. Those emission factors are incorporated below. Result: There is no appreciable difference between the two sets of emissions factors, as the emission factors are either identical or very close in numerical value.
- 3. The number of emissions sources is provided by the applicant.

		Emission	Total VOC	Assumed	Total VOC	
		Factor	Emissions	Hours/yr	Emissions	
SOURCE	# of Sources	(lb/hr/source	(lb/hr)	Operation	(Tons/year)	
GASOLINE (light liquid):		1				
Pump Seals	7	1.2E-03	0,008	8760	0.037	
Valves	103	9.5E-05	0,010	8760	0.043	
Flanges	230	1.8E-05	0.004	8760	0.018	
Process Drains *1	1	0.07	0.070	8760	0.307	
Oil/Water Separator	0		0.000	8760	0.000	
		Lb/hr totals	0.092	Ton/yr tota	0.404	
DISTILLATE FUEL OIL						0.403 ton/yr. This is not significant.
(heavy liquid) *2						
Pump Seals	4	2.9E-02	0.115	8760	0.502	
Valves	58	5.5E-05	0.003	8760	0.014	
Flanges	145	2.4E-04	0.035	8760	0.154	
Process Drains *1	0	0.07	0.000	8760	0.000	
Oil/Water Separator	0		0.000	8760	0.000	
		Lb/hr totals	0,153	Ton/yr tota	0.670	

Fugitive Grand Total (0.25 lb/hr 1.07 Ton/yr

HAP Emissions = VOC Emission Rate * HAP Liquid Mass Fraction

^{*1} Emission factor for the drain is from AP-42 Table 9.1-2 Fugitive Emission Factors for Petroleum Refineries, October/1980

^{*2} Distillate fuel oil emission factors are from the August 1995 AP-42 Interim Emission Factors for Oil and Gas Production Operations

FROM 1995 Leaks Document: > EPA Frocol for Equipment Leak Emissis- Extinates, Nov. 1995.

TABLE 2-3. MARKETING TERMINAL AVERAGE EMISSION FACTORS

Equipment type	Service	Emission factor (kg/hr/source)a	16mlh-1son
Valves	Gas	1.3E-05	
	Light Liquid	1,3E-05 4,3E-05	9,5E-5
Pump seals	Gas	6.5E-05	
•	Light Liquid	6.5E-05 5.4E-04	1.2E -3
Others (compressors	Gas	1.25-04	
and others) D	Light Liquid	I.3E-04	2.9E-#
Fittings (connectors	Gas	4.25-05	
and flanges) C	Light Liquid	8.0E-06	1,8€-5

These factors are for total organic compound emission rates (including non-VOC's such as methane and ethane).

where Ibm = Found mass = 220462 Ibm Per Eligram.

bThe "other" equipment type should be applied for any equipment type other than fittings, pumps, or valves.

C"Fittings" were not identified as flanges or non-flanged connectors; therefore, the fitting emissions were estimated by averaging the estimates from the connector and the flange correlation equations.



RECEIVED FLE

JUN 17 1996

DIV. OF ENVIRONMENTAL QUALITY PERMITS & ENFORCEMENT

June 12, 1996

Mr. Orville D. Green, Assistant Administrator Permits and Enforcement Idaho Department of Health and Welfare Division of Environmental Quality 1410 North Hilton Boise, Idaho 83706-1255

Re: Sinclair Oil Corporation (Boise) - #9509-137-2

Tier 2 Operating Permit #001-00112

Submittal of Revised Allowable Emissions

Dear Mr. Green:

On May 3, 1996, the Division of Environmental Quality (DEQ) granted Sinclair Oil Corporation (SOC) a hold on the issuance of Tier 2 Operating Permit #001-00112. SOC requested the hold in order to revise the permit's allowable emissions.

Please find attached, the revised forms and text (denoted by revision #1) identifying the requested changes to the Tier 2 Operating Permit Application. Please replace the appropriate portions of the Tier 2 Operating Permit Application initial submittal with these revisions.

These revisions reflect a decrease in the allowable gasoline grade petroleum product which may be distributed through the loading rack (EU #11). In addition, the allowable distillate fuel oil grade petroleum product which may be distributed through the loading rack increased. These changes result in a substantial decrease in the facility-wide allowable emissions. Please note that the allowable emissions from Emissions Units 1 through 10 and the allowable fugitive emissions remain unchanged with respect to the Proposed Tier 2 Operating Permit review package dated February 13, 1996.

Should you have any questions regarding the information in this application, please call me at (801) 524-2729.

Respectfully,

Samuel B. Greene P.E.

Corporate Air Quality Engineer

attachments

cc: Kevin Brown w/o/a

Klane Forsgren w/o/a

Mark Peterson W/o/a
David Stice W/o/a

Tier 2 Operating Permit Application
Boise Products Terminal
Sinclair Oil Corporation
Revision 1, June 12, 1996

Table 4.1 Maximum Potential Emissions Summary

EU #	Description	Maximum Potential VOC Emissions (TPY)	Maximum Potential HAP Emissions (TPY)
1	Tank 401	2.12	0.084
2	Tank 404	2.12	0.084
3	Tank 411	2.12	0.084
4	Tank 421	2.12	0.084
5	Tank 431	2.09	0.073
6	Tank 402	0.49	0.012
7	Tank 405	0.49	0.012
8	Tank 406	0.49	0.012
9	Transmix Tank 400	0.21	0.005
10	Prover Tank	0.21	0.005
11	Loading Rack - gasoline	34.0	0.929
	Loading Rack - distillate oil	4.75	0.120
	Fugitive Emissions	1.07	0.121
	TOTAL EMISSIONS	52.3	1.6

The allowable emissions from Emissions Units 1 through 10 and the allowable fugitive emissions remain unchanged with respect to Appendix A of the proposed Tier 2 Operating Permit review package dated February 13, 1996

4.2.2 Fixed Roof Tanks (EU # 6 7 and 8):

Distillate fuel oil grade petroleum products can be stored in these tanks. Emissions from these units are a result of breathing and working losses as defined per AP-42 methodology. The maximum potential emissions from any one of these tanks occurs when distillate grade petroleum product is loaded, stored and unloaded at the defined maximum throughput. The maximum throughput for any one of these tanks is defined as the capacity of the pipeline supplying the terminal distributed to two of the three

Tier 2 Operating Permit Application
Boise Products Terminal
Sinclair Oil Corporation
Revision 1, June 12, 1996

Table 4.2 Maximum Annual Product Throughput Limits

EU #	Description	Maximum EU Throughput (gpy)
1	Tank 401	58,254,000
2	Tank 404	58,254,000
3	Tank 411	58,254,000
4	Tank 421	58,254,000
5	Tank 431	58,254,000
6	Tank 402	168,630,000
7	Tank 405	168,630,000
8	Tank 406	168,630,000
9	Transmix Tank 400	38,080
10	Prover Tank	220,200
11	Loading Rack - gasoline	11,850,000
·	Loading Rack - distillate oil	570,276,000

4.4.1 Storage Tank Monitoring (EU # 1 through 9)

The operator will record the quantity of product received in all storage tanks. This information will be compiled on an annual basis to determine annual product throughput. Periods of excess emissions will be defined as any calendar year (January 1 to December 31) in which the annual throughput of the individual storage tank exceeds the limits indicated in Table 4.2.

4.4.2 Prover (EU # 10)

The operator will compile, on an annual basis, the volume of product transferred to the prover. This information is proportional to the number of flowmeter calibration cycles during the year. Periods of excess emissions will be defined as any calendar year (January 1 to December 31) in which the annual throughput of the prover tank exceeds the limit indicated in Table 4.2.

Tier 2 Operating Permit Application
Boise Products Terminal
Sinclair Oil Corporation
Revision 1, June 12, 1996

APPENDIX: D PROPOSED PERMIT CONDITIONS

1. The facility shall be limited to a maximum annual product throughput rate as listed in Table D.1:

Table D.1: Maximum Annual Product Throughput Limits

EU #	Description	Maximum EU Throughput (gpy)
1	Tank 401	58,254,000
2	Tank 404	58,254,000
3	Tank 411	58,254,000
4	Tank 421	58,254,000
5	Tank 431	58,254,000
6	Tank 402	168,630,000
7	Tank 405	168,630,000
8	Tank 406	168,630,000
9	Transmix Tank 400	38,080
10	Prover Tank	220,200
11	Loading Rack - gasoline	11,850,000
	Loading Rack - distillate oil	570,276,000

- 2. Compliance with the permitted maximum potential emissions limit will be based upon monitoring the annual product throughput of each EU. Reporting of the annual EU product throughput will be combined with the registration of emissions and payment of fees for Tier 1 permits (re: IDAPA 16.01.01 Section 525).
- 3. A period of excess emissions is defined to be any calendar year (January 1 to December 31) in which the annual throughput of the individual EU exceeds the limit indicated in Table D.1.

SECTION 1: GENERAL INFORMATION

COMPANY & DIVISION NAME	Sinclair Oil C	proporation / Boi	se Products Termin	sal .				
STREET ADDRESS OR P.O. BOX	712 North Cu	tis	·					
CITY	Boise							
STATE Idano	ZIP	83706						
PERSON TO CONTACT	Sam Greene							
TITLE	Corporate Air	Quality Enginee	¥				· · · · · · · · · · · · · · · · · · ·	
PHONE NUMBER	(801)524-2	729		•				
EXACT PLANT LOCATION	S-8, T-3N, R-	2E						
GENERAL NATURE OF BUSINESS	Petroleum Pr	xducts Storage	and Loacing					
NUMBER OF FULL-TIME EMPLOYEES	0,5							
PROPERTY AREA (ACRES)	- 1]		(2) Permit to M (3) Permit to Co	onstruct a new fac odify an soliding a onstruct a new so Owner or Location t to Operate;	iource; urce at an exis	5 sting facility;	
DISTANCE TO NEAREST STATE BORD	ER (MILES)	50						
PRIMARY SIC				SECONDARY S	ic			
PLANT LOCATION COUNTY	Ada	***************************************		ELEVATION (FT	ר		2710	
UTM ZONE	11)				,		
UTM (X) COORDINATE (KM)	560463	-		UTM (Y) COORD	DINATE (KM)	ļ	4828630	
NAME OF FACILITIES List ail facilities within the state that are un	nder your contr		OTHER FACILITIE		I none, so state			
Burley Products Terminal		425 east Hwy i	31 Bunev cano 83	318 Cassia County				•
Baise Products Terminal		712 North Curt	s Boise Jano 837	'06 Ada County				
	J							
]			······································				
OWNER OR RESPONSIBLE OFFICIAL		Mark Peterson						
TITLE OF RESPONSIBLE OFFICIAL		Manager, Pipel	ine and "ammals					
Based on information and belief formed affidocument are true, accurate, and complete		inquiry, I certify	the statements an	d information in this			·	
SIGNATURE OF OWNER OR RESPONS	BLE OFFICIAL	·····		<u>www</u>		DATE	•	
						2.7		

SECTION 6: LOADING RACKS

DEQ USE ONLY	
DEQ PLANT ID CODE	DEQ PROCESS CODE DEQ STACK ID CODE
DEQ BUILDING ID CODE	PRIMARY SCC SECONDARY SCC
DEQ SEGMENT CODE	
PART A: LOADING RACK DATA	
PROCESS CODE OR DESCRIPTION	DISTILLATE FUEL OIL LOADING Revolut 1, May 10, 1885
STACK DESCRIPTION	EU #11
BUILDING DESCRIPTION	
DATE INSTALLED OR LAST MODIFIED	1952
TYPE OF LOADING Pleasa choose from the following: (01) Overhead loading - spiash fill, normal service; (02) Overhead loading - spiash fill, balanced serviced; (03) Overhead loading - submerged fill, normal service; (04) Overhead loading - submerged fill, balanced service; (05) Bottom loading - normal service; (06) Bottom loading - balanced service	LOADING ARM VAPOR CLOSURE Please choose from the following: (01) Incineration; (02) GREENWOOD; (03) SOCO; (04) CHICKSAN; (05) None - open to air; (06) Other
MATERIAL LOADED	DISTILLATE FUEL OIL
ANNUAL THROUGHPUT (GAL.)	570:3E6 maximum \(\triangle \)
REID VAPOR PRESSURE (PSI)	0.022 (annual average) (0.05 maximum)
MAXIMUM MATERIAL TEMPERATURE (DEG. F)	59 (annual average maximum)
AVERAGE MATERIAL TEMPERATURE (DEG. F)	51 (daily average)

SECTION 6,	PART B EU #11, DI	STILLATE FUEL OIL						
namental de la	OPERATING DATA		OPERATING SCHEOULE	-	walle t, litter 10 1986			
PERCERS PUBL	,		Or tion line desirede					
DEC-FEB	25		HOURS/DAY	24				
MAR-MAY			DAYSWEEK					
JUNIAUG	25		WEEKSMEAR	52				
SEP-NOV	25							

PARAMETER	POLLUTION CONTROL FORMACHT	PRIMARY		35	CONDARY			
*Y\$=		NAVA		146	A			
TYPE CODE (FRC	IM APP. A)							
WANUFACTURES								
MODEL NUMBER				[ļ i		
PRESSURE DRO	P (IN. OF WATER)			Ī	:			
WET SCRUBBER				F				
	CLOTH RATIO (FPN)			<u>—</u>				
the cooling halos	men of tours of feet des	i		· · · · ·	······································			
	VENTRATION AND BUILDINGVAREAD	ATA	STACK DAT	Ά		p		
ENCLOSED? (YAN	1	HA	GROUND ELEVATION (FT)	•		N/A		
HOOS TYPE (FRO	DM APP. \$)		UTM X COORDINATE (KM)	•		<u> </u>		
MINIMUM FLOW (ACFM)		UTM Y COORDINATE (KM)	•				
PERCENT CAPTL	IRE EFFICIENCY		STACK TYPE (SEE NOTE	BELOW)				
SUILDING HEIGH	T (FT)		STACK EXIT HEIGHT FROM	M GROUND LEVEL	(PT)			
SUILDING LENGT	₩ (FT)		STACK EXIT CLAMETER (F	·**)				
BUILDING WIDTH	(FT)		STACK EXIT GAS FLOWER	ATE (ACFM)				
			STACK EXIT TEMPERATU	REIDER FI				
						'		
POLLUTANT	AR POLLUTANT CHERONS CAS MIMBER	EMISSION	PERCENT	ESTIMATED OR	44 (///	HE EMISSION		
-Otto:wi	CAS MUNICIPA	FACTOR	CONTROL	MEASURED EMISSIONS				
		(SEE NOTE BELOW)	EFF*CIENCY	LBSAIR	(LBSAR)	(TONS/YR)	REFERENCE	
PM								
PM-10								
SO2				= [1	i		
co					1		: 1	
NOx								
voc			: ol		1,1	4.81	AF-42	◮
LEAD						7.51		
				<u> </u>				Δ
Xylenes	1330-20-7	<u> </u>	<u> </u>	<u></u>	1 5E-021	5.9E-025	AP-42	دب

NOTES:

STACK TYPE - (11) DOWNWARD; (22) VERTICAL (UNCOVERED); (33) VERTICAL (COVERED); (44) HORIZONTAL; (55) FUGITIVE EMISSION FACTOR - IN LISAUNITS. PLEASE USE SAME HOURLY UNITS GIVEN IN FUEL DATA SECTION,

SECTION 6: LOADING RACKS

AVERAGE MATERIAL TEMPERATURE (DEG. F)

DEQ USE ONLY				
DEQ PLANT ID CODE	DEQ PROCESS CODE		DEQ STACK ID CODE	
DEQ BUILDING ID CODE	PRIMARY SCC		SECONDARY SCC	
DEQ SEGMENT CODE				
PART A: LOADING RACK DATA				
PROCESS CODE OR DESCRIPTION	GASOLINE LOADING	Revisi	ion 1, May 10, 199	6
STACK DESCRIPTION	EU # 11			· · · · · · · · · · · · · · · · · · ·
BUILDING DESCRIPTION				
DATE INSTALLED OR LAST MODIFIED	1952			
TYPE OF LOADING Please choose from the following: (01) Overhead loading - splash fill, normal service; (02) Overhead loading - splash fill, balanced serviced; (03) Overhead loading - submerged fill, normal service; (04) Overhead loading - submerged fill, balanced service; (05) Sottom loading - normal service; (06) Bottom loading - balanced service	3.4	Ple (0 (0 (0 (0	ADING ARM VAPOR CLOSURE lase choose from the following: 11) Incineration; 12) GREENWOOD; 13) SOCO; 14) CHICKSAN; 15) None - open to air; 16) Other	
MATERIAL LOADED	GASOLINE			
ANNUAL THROUGHPUT (GAL.)	11.9E5 (maximum)	Δ		
REID VAPOR PRESSURE (PSI)	annual average=10 (15 maximum)	1		
MAXIMUM MATERIAL TEMPERATURE (DEG. F)	59 (annual averag	ja maximum)	•	
	i			

SECTION 6,	PARIS EURIT, G	ASCA INC						
DEGCENT SUST	OPERATING DATA CONSUMPTION PER QUARTER		OPERATING SCHEDUL	74444-), 1447 M. S	r i=			
renceni rocki	CONSOMPTION FER COATIES			•				
OEC-FEB	25		HOURS/DAY	26				
YAM-RAM	25		DAYSAMEEX					
DUA-KUG	25		WEEKS/YEAR	52				
SEP-NOV	25							
	POLLUTION CONTROL FOLIPMENT							
PARAMETER		PRIMARY		SECONDA	**			
TYPE		SVA		N/A		<u></u>		
TYPE CODE (FRO	OM APP, At							
MANUFACTURE!	R							
MODEL NUMBER	t .	1		Ę				
PRESSURE DRO	P (N. OF WATER)	-						
WET SCRUBBER	FLOW (GPM)							
	CLOTH RATIO (FPM)				7			
	***************************************	1		1,				
	VENTRATION AND BUILDINGVARUE O	MIA.	STACK E	MATA				
ENCLOSED? (YA	9	HUA	GROUND ELEVATION (PT)		N/A Í		
HOOD TYPE (FR	OM APP, 8)		UTM X COORDINATE (CM)				
MINIMUM FLOW	(ACFM)		UTM Y COORDINATE (I	(N/s				
PERCENT CAPT	URE EFFICIENCY		STACK TYPE (SEE NOT	TE BELOW)				
BUILDING HEIGH	IT (FT)		STACK EXIT HEIGHT F	ROM GROUND LEVEL (FT)				
BUILDING LENGT	TH (FT)		STACK EXIT DIAMETER	R (FT)				
BUILDING WIDTH	1 (FT)		STACK EXIT GAS FLOW	vrate (acpm)				
			STACK EXIT TEMPERA	TURE (DEG. F)				
POLLUTANT	AR POLLUTANT EMASSONS CAS NUMBER	EMISSION	PERCENT	ESTIMATED OR	ALLOWA	BLE EMSSIONS		
COLLOYAGO	CAS HOMBEN	FACTOR ISEE NOTE	CONTROL	WEASURED EMISSIONS	(LBSAIR)	(TONSMR)	REFERENCE	
		3ELOW)		(LSSAIR)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
PM								
PM-10								
902								
co				-				
NOx				· 1				
voc			0	-	7,8	34.01	AP-42	
LEAD								
Bergere	71-43-2		0		4.206-02	8 18	AP-12	4
		<u> </u>						$\overline{\Delta}$
Idenane	148,44.4		<u></u>	<u></u>	6.70€-02	<u> </u>	AP-42	
	110-54-3			i	7 700 000	N 4A.	10.42	/11
Xylenes	1330-20-7		0		2.306-02		AP-42	Δ
Herane Xyenes Tokune	1339-20-7		<u> </u>		1.906-02	0.28	AP-42	△
Xylenes	1330-20-7		i i		1,90E-02		AP-42	A A
Xylenes Tokume	1339-20-7		<u> </u>		1.906-02	0.28	AP-42	△

STACK TYPE - 01) DOWNWARD: 92) VERTICAL (UNCOVERED); 03) VERTICAL (COVERED); 04) HORIZONTAL; 05) FUGITIVE EMISSION FACTOR - IN LESAURITS. PLEASE USE SAME HOURLY UNITS GIVEN IN FUEL DATA SECTION.

NOTES:

Tier 2 Operating Permit Application Some Prioducts Terminal Sinciair Oil Corporation May 10, 1995 Revision 1

Potential Emissions - Loading Rack

Formula:

Loading Losses (lb/1000 gal) = (12.46)(5)(P)(M)/T

Where:

S = seturation factor

P = True Vapor Pressure (pele)

M = Molecular Weight of Vapor

T = Liquid Temperature (cag. R)

Loading fack emissions - gesoline

Daily Loadout	773	3PO
Annual Throughput	11850.09	М дру
MW .	96,503	
PVRD	3.54	Della
Seturation Factor	. 1	
Temperature	Sit	deg. A
Emission Factor	5,7404	ib/M gal
Total VCC emission rate	34.01	TPY

	Component	Vacor Maso	Emmeron	HAP Errossion
L	<u> </u>	Fraction	Pers (TPY)	Pate (TPY)
7	Senzene	0.0054	0.1837	3.1837
S	Hexane	0.0087	0.2959	1.2959
3	Xylene-o	0.0008	0.0204	3.0204
4	Xylene-m	0.0013	0.0442	0.0442
5	Xylene-p	9.001	0.0340	0.034C
3	Totuene	0.0076	0.2586	0.2506
7	Ethylberizens	0,0006	0.0170	20170
Э	Nachthalene	5.96E-07	0.0000	3.0000
Э	Trimethylpentane (2,2,4)	0.0022	0.0748	0.0748
10	Gapotine/AVP10)	0.9727	33.0896	
	TOTAL	1	34,0121	3,9296

Loading rack emissions - fuel oil

Osily Losdout	37200	3PD
Annual Throughput	570278	м дру
w	129.037	
Pvap	3.0053	C948
Saturation Factor	7	
Temperature	517	deg. R
Erreeson Factor	3.0157	5/M gal
Total VOC armation rate	4,75	"PY

Component		Vapor Mass	Emperon	HAP Emotion	
		Fraction	Rete (TPY)	Rete (TPY)	
,	Benzeno	0.000000	0.000000	1 0.0000000	
2	Xylene-o	0.003100	0.014740	0.014740	
3	Xylene-m	0.011500	0.054681	0.054661	
4	Xyrene-o		3.000000	0.000000	
5	Tokuene	0,010200	0.048500	0.048500	
\$	Nachthalene	0.000500	0.002377	0.002377	
7	Fuel oil #2	0,974700	4.834611		
015005	TOTAL	1,000000	4.754911	0,120296	



PUBLIC WORKS DEPARTMENT CITY HALL 4TH FLOOR H. BRENT COLES MAYOR

COUNCIL MEMBERS

PAULA FORNEY COUNCIL PRESIDENT

CAROLYN TERTELING

SARA BAKER ANNE STITES HAUSRATH M. JEROME MAPP MIKE WETHERELL

March 14, 1996

Mr. Tony Wilson
Program Development Specialist
Division of Environmental Quality
1410 N. Hilton St.
Boise ID 83706-1255

RECEIVED

MAR 1 9 1996

DIV. OF ENVIRONMENTAL QUALITY PERMITS & ENFORCEMENT

Dear Mr. Wilson:

The City of Boise has reviewed Sinclair Oil's public review package for the proposed Tier II Operating Permit and has the following comments.

Sinclair's calculations showed HAP emissions at the 25 tons/year limit. DEQ's recalculation of emissions using different factors allows Sinclair to be permitted under the 25 tons/year limit. In light of the fact that Sinclair is close to being designated a major source by all calculations and that DEQ used many of Sinclair's assumptions regarding vapor pressures and HAP compositions of gasoline in their analysis; the city believes that a more stringent reporting requirement is prudent.

We would recommend that Sinclair's throughput records be compiled and submitted to DEQ twice a year for review. The data should be summarized with the details provided as support, so that the throughputs can be compared to the permitted levels. This requirement should not create large additional demands on Sinclair or on DEQ. Additionally, the requirement will allow for timely evaluation of compliance with the Tier II permit. We also recommend this approach due to the proximity of the facility to a residential care center, a school and hospital. Assurance of public health protection should be of utmost concern for the issuance of this permit.

The City of Boise appreciates the opportunity to respond to this public notice.

Sincerely.

Carl Ellsworth

Environmental Division Manager

cc:

Bill Ancell Mayor Coles

cc/wp/bbeird/dwp/eincleir.let CF/SF GWP-900



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MAR 2 1 1996

DIV. OF ENVIRONMENTAL QUALITY
PERMITS & ENFORCEMENT

March 20, 1996

Mr. Brian R. Monson, Bureau Chief Operating Permits Bureau Idaho Department of Health and Welfare Division of Environmental Quality 1410 North Hilton Boise, Idaho 83706-1255

Re: Sinclair Oil Corporation (Boise) - #9509-137-2

Approval of Proposed Tier 2 Operating Permit #001-00112

Dear Mr. Monson:

Sinclair Oil Corporation (SOC) has reviewed the Proposed Tier 2 Operating Permit (Permit) for our Boise facility, which is currently undergoing a public comment period. SOC feels that the proposed Permit accurately reflects the requested operating conditions and limitations presented in the permit application. SOC has identified items in the technical analysis portion of the Permit that may require revision or clarification in order for the Permit to be technically accurate. These items are included as an attachment to this letter.

Please call me at (801) 524-2729 if you would like to discuss this information.

Respectfully,

Samuel B. Greene P.E.

Corporate Air Quality Engineer

attachments

cc: K. Brown

K. Forsgren

M. Peterson

D. Stice

Attachment A: Comments on Technical Analysis

Fugitive Emissions

The fugitive emission calculation submitted with the Permit application was based upon Refinery Average Emission Factors¹ applied at 8,760 hours per year. Subsequent to Permit application submittal, the protocol document has been revised. The new revision includes Marketing Terminal Average Emission Factors² which are directly applicable to fugitive sources in light liquid (ie. gasoline) service. SOC believes these factors more accurately reflect the fugitive emissions from light liquid service at this facility. Inclusion of the new factors significantly reduces the fugitive VOC and HAP emissions from the facility and SOC supports the use of these factors for this application. The Division's technical analysis utilized "Interim" Emissions Factors³ for light liquid service which correspond closely to the Marketing Terminal Average Emission Factors.

With regard to emissions from fugitive sources in heavy liquid (ie. fuel oil) service, neither the Interim factors nor the Marketing Terminal Average Emission Factors include corresponding factors for fuel oil service. The Division utilized "light oil" from Average Emission Factors for Oil and Gas Production Operations for the fuel oil emission factors. SOC is concerned with the use of the "Oil and Gas Production" factors for fuel oil service because these factors result in a higher emissions (lb/hr/source) than the corresponding gasoline service factors.

Fugitive emissions from gasoline service tend to be greater than fugitive emissions from fuel oil service. SOC also recognizes that more accurate factors may not yet be developed for the fuel oil service application. Although the fuel oil service factors used in the technical analysis overpredict fugitive fuel oil

Protocol for Equipment Leak Emissions Estimates, EPA-453/R-93-026 June 1993, USEPA Emission Standards Division.

Protocol for Equipment Leak Emissions Estimates, EPA-453/R-95-017, November 1995, USEPA Emission Standards Division.

New Equipment Leak Emissions Factors for Petroleum Refineries, Gasoline Marketing and Oil and Gas Production Operations, February 1995, USEPA.

New Equipment Leak Emissions Factors for Oil and Gas Production Operations, August 1995, USEPA.

Sinclair Oil Corporation (Boise) - #9509-137-2
Proposed Tier 2 Operating Permit #001-00112
March 20, 1996

emissions, thus providing a conservative estimate of these emissions, SOC agrees with the Division's assessment of fugitive emissions from fuel oil service.

Meteorological Data

The meteorological data used for the emissions analysis in the permit application needs to be clarified. For the Boise Terminal (#9509-137-2) Tier 2 Operating Permit Application, Tanks 2.0 meteorological data for Boise, Idaho was used. For the Burley Terminal (#9509-138-2) Tier 2 Operating Permit Application, Tanks 2.0 meteorological data for Pocatello, Idaho was used. This resulted in annual average tank liquid temperatures of 51.1°F for the Boise facility and 46.6°F for the Burley facility. Pocatello was chosen for the Burley facility because it was the closest city to Burley in the Tanks 2.0 database.

MEMORANDUM

TO:

Brian R. Monson, Chief Operating Permits Bureau

Permits and Enforcement

FRCM:

Darrin A. Mehr, Air Quality Engineer Operating Permits Sureau

Wade Woolery, Air Quality Engineer |)

Technical Services Bureau

THROUGH:

Susan J. Richards, Air Quality Permits Manage

Operating Permits Bureau

SUBJECT:

Technical Analysis for Proposed Tier II Operating Permit #001-001:2

Sinclair Oil Corporation (Boise)

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 of the Rules for the Control of Air Pollution in Idaho (Rules) for issuing Operating Permits.

FACILITY DESCRIPTION

Sinclair Oil Corporation's (Sinclair) Boise, Idaho, facility distributes petroleum products received through the Chevron supply pipeline originating in Salt Dake City, Utah. Petroleum products consisting of various grades of gasoline and distillate fuel oil are temporarily stored in tanks prior to transfer to mobile carrier tanks for transport and delivery off-site.

PROJECT DESCRIPTION

This project is for the development of an Operating Permit (OP) that will create state and federally enforceable limitations on the facility's potential to emit hazardous air pollutants (EAPs). This permit would make the Boise facility a synthetic minor for EAP emissions, which allows the facility to be recognized as an "area source" for EAPs. Bulk gasoline distributors that are recognized as area sources of HAPs avoid the stringent control technology installation requirements of the Bulk Gasoline Distribution MACT standards.

The OP will address the following existing point and fugitive emission sources:

Gasoline Storage Tanks

The following tanks are used to store gasoline grade petroleum product. Less volatile distillate fuel oil may be stored in these tanks, which results in lesser emissions in comparison to storage of gasoline, and thus, does not increase the facility's potential to emit volatile organic compounds (VOCs) or HAPs.

TANK IDENTIFICATION #	STORAGE CAPACITY (gallons)
401	839,400 -
404	\$39,400
411	339,400
421	339,400
431	3,323,800

Sinclair Boise - TECH MEMO February 13, 1996 Page 2

Distillate Fuel Oil Storage Tanks

The following tanks are used to store distillate fuel oil grade petroleum products:

TANK IDENTIFICATION #	STORAGE CAPACITY (Gallous)
402	839, 300
405	339,300
406	839,300

The following two tanks can be considered as "process" tanks. The Prover Tank is used to verify the quantities of petroleum product being transferred to carrier tanks for off-site transport and delivery. The "Trans-Mix" Tank is used to store waste petroleum products (off specification fuels, residual product from other tanks, etc.):

TANK IDENTIFICATION #	STORAGE CAPACITY (Gallons)
Prover, #400	734
Trans-Mix	3, 308

The facility is equipped with a double bay loading rack. The loading rack system is a submerged pipe design where one or more loading arms of the loading rack system is/are placed in the access hatches in the top of the carrier tank positioned in either loading bay. The submerged fill design reduces loading emissions by decreasing turbulence in the liquid during the transfer process. No additional emissions control equipment is employed.

DOUBLE BAY LOADING RACK	MAXIMUM DAILY TERCUGAPUT (gallons/day)
Gasoline Serrice	638,400
Distillate Fuel Oil Service	924,000

The following equipment is identified as fugitive emissions sources for VOCs and HAPs:

SOURCE	NUMBER OF SOURCES IDENTIFIED
Gasoline Service Pump Seals	7
Valves	103
Flanges	230
Process Drains	<u>1</u>
Cil/Water Separators	0.00
Distillate Fuel Oil Service Pump Seals	4
Valves .	58
Flanges	145
· Process Drains	0.30
Oil/Water Separators	0.20

sinclair Boise - TECH MEMO
February 13, 1996
Page 3

Specific details about the process description can be found in the application materials provided by the Sinclair Oil Corporation.

SUMMARY OF EVENUS

On September 12, 1995, DEQ received an application for a Tier II OP. This application was declared administratively complete on October 12, 1995. Additional information was received on November 29, 1995, and on January 10, 1996.

The required public comment period is scheduled to start on or around February 23, 1996 and will end on or around March 23, 1996. If the public comment period is scheduled to end on March 23rd (a Saturday), public comment will be accepted until Monday, March 25, 1996.

<u>NDIBRUDEID</u>

1. Emission Estimates

Imission estimates were originally provided by Sinclair in the September 12, 1995 submittal. Additional supporting calculations and documentation were included in the November 29, 1995, and January 10, 1996, submittals.

The intent of this Tier II permit application is to establish enforceable emission limits for HAPs below the 10/25 ton per year (T/yr) thresholds for single/aggregated HAPs. The facility would be a major source regardless, as the facility's actual annual VOC emissions exceed the 100 T/yr threshold.

Gasoline Physical Properties Assumptions

There were a number of important Sinclair assumptions that DEQ had to accept in order to use Sinclair's emission estimate methodology. Gasoline service emissions constitute the vast majority of the facility's VOC and HAP emissions. The methodology employed was used to determine permit allowable VOC and HAP emissions. The following three (3) points are the most critical to this permitting analysis (see Attachment A to review a copy of DEQ's emission estimates):

- Gasoline with a Reid Vapor Pressure of ten (10) pounds per square inch absolute (psia) is representative of an annual average Reid Vapor Pressure (RVP) for gasoline.
- Various grades of gasoline (winter blend unleaded regular versus summer blend unleaded premium, etc.) have different individual HAP compositions. The HAP compositions will also vary from refinery to refinery.
- 3. The HAP emissions associated with the RVP 10 psia case are the worst case emissions with regard to potential to emit.

Gasoline RVP is increased during colder months to allow for easier, more efficient, internal combustion engine starting, warmup, and operation. In warmer summer months, the RVP is decreased to reduce problems with vapor lock during engine operation. Lowering the RVP property in gasoline reduces VCC emissions from the volatile gasoline product. The summer months (May 1 through September 15) are identified as the "ozone season." Fuel volatility—specifically gasoline RVP—is regulated in all states within the U.S. during these months by 40 CFR Part 80. More stringent requirements may be contained in State Implementation Plans for states which have ozone nonattainment areas. VCC emissions are regulated in these areas to control the formation of ozone pollution. Idaho has no areas legally recognized as nonattainment for ozone.

The applicable requirement for the distributors of gasoline fuel for use in spark ignition engines is set by the latest standard available from the American Society of Testing and Materials (ASTM). The most recent specification is ASTM D4814-95a, which sets the maximum allowable RVP by month throughout the calendar year. This requirement is regulated by Section 37-2506, Idaho Code. The resulting average annual RVP (best case) is approximately 10.9 psia (see Attachment 3 to review the ASTM volatility schedule and the average annual RVP estimation). The worst case allowable RVP is approximately 12.6 psia.

Sinclair Boise - TECH MEMO February 13, 1996 Page 4

> All of the points listed above were considered in the development of a fier IT OF that would be flexible enough to allow Sinclair to continue daily operations without placing difficult operating requirements in the permit. Without specific information on the actual "worst case" gasoline product's chemical composition, the assumption that the application materials presented a reasonable prediction of the chemical composition was used.

> The applicant has stated that there is no truly accurate way for Sinclair to predict the exact HAP concentrations in the gasoline received by the terminal through the supply pipeline. This is because the HAP concentrations vary with differing RVP specifications, as well as with the various refineries producing the gasoline product. At DEQ's request, Sinclair provided a copy of the study used for comparison with the gasoline composition presented in the application (distillate fuel oil HAP composition was based on data from actual analyses).

> The Radian study contained four types of gasoline that appeared applicable to this project:

- Winter blend premium;
- Wincer blend regular:
- Summer blend premium: Summer blend regular.

See Attachment C to review a copy of the comparison of the HAP compositions between the various blends of gasoline and the Sinclair submittal received by DEQ on November 29, 1995. The conclusion drawn from this information is that the study gasolines' liquid state EAP compositions are quite similar to those presented as the application's reference casoline.

The submitted report, however, does not contain specific information on the RVP of the samples. The allowable range for RVP in gasoline distributed within Idaho is between 9.0 and 15.0 psia. The emission estimates presented in the application are for RVP 10 casoline throughout the calendar year. Because the goal of this Tier II CP is to establish synthetic minor EAP emission limits for the facility, the overriding concern should be that EAP emissions are adequately represented, and thus, limited by operating requirements related to the parameters affecting EAP emissions.

The best way to identify the potential emissions of HAPs and VCCs would be to have the detailed composition analysis of gasoline products at or near each of the individual RVP limits. The analysis that was employed to establish the allowable emissions is described below.

Loading Rack System

SPA AP-42 Section 5.2 - Transportation and Marketing of Petroleum Liquids, TRA AP-42 Section 5.2 - Transportation and Marketing of Petroleum Liquids, January, 1995, emission factor methodology was used to estimate VCC emissions for the gasoline loading rack. There is a + or + thirty percent (30%) probable error associated with this emission factor. The computer software program TANKS, Version 2.0 (TANKS2), September, 1993, developed by the American Petroleum Institute and ERA, was used to estimate emissions resulting from the storage tank loading, storage, and unloading of the petroleum products. TANKS2 provided the vapor fraction of HRPs present at the climatic conditions for Boise, Idaho, based on chemical composition and physical property data. This information was used to estimate the individual HAP, aggregated HAP, and VCC emissions for the loading tack system. Loading rack operation was assumed to occur for 3760 hours per

Upon further review of the TANKS2 results, it appeared that the HA2 vapor phase information for the Boise facility loading rack calculations was actually representative of the Burley facility's conditions. Potential emissions calculations performed by DEQ staff predicted that the twenty-five (25) T/yr HA2 cap would be exceeded due to an increase of approximately 0.6 T/yr. Therefore, calculations for the loading rack emissions were revised according to the ERP vapor phase information generated by TANKS2 using Boise climatic data.

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AB2588 Emissions Estimation Techniques for Petroleum Refineries and Bulk Terminals, July 1989. Radian Corporation.

- A comparison between HAP emissions resulting from the following cases was performed using individual months over an entire calendar year:
- A constant RVP of 10 psia throughout the year (as utilized in the application).
- A monthly variation in RVP that followed the "best case" or lower allowable RVP according to the applicable standard (ASTM D4814-95a).
- 3. A constant RVP of 11 psia throughout the year.
- 4. A constant RVP of 13 psia throughout the year.

The goal of this comparison was to identify which case should be used to determine the allowable aggregated and individual HAP emissions for the Tier II OP. This analysis assumes the HAP concentrations present in the liquid state for each of the four (4) cases are identical (see Attachment D to review the spreadsheets and TANKS2 results).

Because the loading rack emissions dominate the facility's total emissions, it was the only emission source analyted. An important item to note is that the use of individual month HAP and VOC emissions data predicts a greater amount of annual emissions when compared to the annual method where a single annual average mole fraction for each HAP is used to determine a loading loss factor. The monthly method may be subject to additional rounding error that increased the amount of estimated emissions. Therefore, the values for Case I will not match the proposed allowable emission limits in the Tier II OP.

It would seem logical that the greater amount of HAPs would be emitted from a more volatile gasoline since VCC emissions increase as the RVP increases. A summary that includes the two individual HAPs emitted in the greatest amounts, aggregated HAPs, and VCC emissions follows. All other HAPs are predicted to be emitted in lesser quantities, including aggregated meta, ortho, and para xylene isomers (listed in Title III of the Clean Air Act Amendments as Xylenes (isomers and mixtures, CAS #1330207).

as:	VCC Emissions (Tons/yr)	Aggregated EAPS Emissions (Tons/YI)	Single HAP Hexane Emissions (Tons/yr)	Single EAP Toluene Emissions (Tons/yr)
Constant RVP = 10 psia	675.11	19.35	6.09	4.45
Variable RVF = ASTM D4814-95a	712.17	19.24	5.02	4.50
Constant RVP = 11 psia	746.30	19,23	6.05	4.46
Constant RVP = 13 psia	858.53	13.49	5.83	4.24

DEQ's analysis results agree with the information provided by Sinclair in their January 10, 1996, submittal. The HAP emissions for a higher RVP gasoline actually are less than for a lower RVP gasoline due to a smaller proportion of HAPs present in the vapor phase of the more volatile, higher RVP cases.

This analysis also provided the justification to not include a Tier II compliance monitoring requirement for Sinclair to monitor the RVP property of the gasoline received and distributed by the facility. This monitoring requirement would have been included in the permit to document that the RVP of the gasoline did not exceed the ten (10) psia annual average used to establish the synthetic minor emission limits and the applicable standard according to Section 37-2506, Idaho Code, which establishes the upper RVP limitation by month throughout the entire calendar year.

Sinclair Boise - TECH MEMO February 13, 1996 Page 6

In the absence of RVP monitoring, the only monitoring and recordkeeping required for Sinclair to establish compliance with the proposed emission limits and throughputs is the tracking of gasoline and distillate fuel oil types and the amounts. The requirement will apply to all storage tanks except for the "Transmix" Tank which handles residual tank product and waste product, such as oil/water mixtures, etc., and will apply to the double bay loading rack system.

Petroleum Product Storage Tanks

The TANKS2 software provided the annual individual HAP, aggregated HAP, and VOC emissions for each of the storage tanks. The specification entered into the program were based on the information provided in the application materials. The results are compiled in Attachment A.

Fugitives

New "interim" AP-42 emission factors. August, 1995, for distillate fuel oil, and February 1996, for gascline (light liquid) approvable by EPA for use in estimating emissions for VOCs (see Attachment E) were used to estimate allowable fugitive VOCs, and thus HAPs. The interim fugitive emission factors are available from EPA on the EPA TTN Bulletin Board system. The emission factor for the process drain was taken from AP-42 Table 9.1-2, 10/1980. No oil/water separators were addressed in the application, and therefore, emissions from such a source are not accounted for in the allowable emissions.

The EPA interim emission factors were used because they are the most current emission factors available for pump seals, valves, and flanges. The application's potential to emit/allowable emissions estimates for the fugitive sources appeared to incorporate a 2000 hour per year assumption when back calculated from emissions and emission factor data. Because the loading rack and storage tank operations were not restricted below 5760 hours per year, the fugitive emissions should reflect the same assumption, unless additional information substantiating a lesser number is received.

The use of EPA's interim emission factors and an increase of 43% (8760 versus 2000 hours per year) resulted in a significant reduction in estimated fugitive VOC and HAP emissions. A 43% increase in fugitive emissions using the application material's emission factors would place this facility's potential to emit aggregated HAPs at greater than 25 tons per year from fugitive emission sources alone.

Emission Estimates Conclusions

The final result of all of the analyses performed is that an increased level of confidence is established. A great number of critical assumptions were incorporated into the analysis. The most important of which is the use of a single HAF composition for gasoline, regardless of actual RVF. The original application contained a potential to emit value that in fact rounds up to twenty-five (25) T/yr with two (2) significant figures. The alteration of a final aggregated HAF potential to emit value based on revised fugitive emission factors reduces the necessity for DEQ to require exact gasoline composition for the permit development.

Allowable throughputs remained as requested in the application, and should allow Sinclair a comfortable degree of operational flexibility and expansion above current actual operations. Had the interim emission factors not been utilized, a reduction in allowable throughputs at the Boise facility would have been required, due to possibly increased HAP emission estimates from the loading rack system.

A review of past DEQ permitting reveals that this analysis is consistent with that performed for Permit to Construct on other gasoline distribution facilities.

Facility allowable annual emissions will be:

POLEDEANE	ALLOWABLE EMISSION (Tons/y=)
Volatile Organic Compounds (VCCs)	685.38
Aggregated Hazardous Air Pollutants (HAPs)	19.51
Individual BAPs:	3.82
Ethylbenzene	0.35
Reyane	6.13
Naphchalene	0.0044
Toluene	\$.36
Trimethylpentane 2,2,4 (Iso-Cotane)	1.43
XVlenes (mixture)	2.29

2. Modeling

No modeling was performed to assess the ambient air quality impacts of this facility.

3. Area Classification

Sinclair's Boise facility is located within the Northern Ada County Nonattainment Area. This facility is located within an area officially designated a "moderate" nonattainment area for carbon monoxide (CO) and particulate matter with a mean aerodynamic diameter of ten (10) microns or less $({\rm FM}_{12})$. This area is designated as either in attainment or unclassifiable for all other criteria air pollutants $({\rm NO}_x,~{\rm SO}_x,~{\rm and}~{\rm VOCs})$.

The facility is located AQCR 64, Zone 11.

4. Facility Classification

The facility is not a designated facility as defined by IDAPA 15.01.01.006.25 of the Rules (petroleum storage capacity of the facility is 9.2 million gallons. Designated facility threshold is 12.5 million gallons storage capacity).

The facility is classified as an Al source due to permitted VOC emission limits in excess of 100 T/yr. Actual annual VCC emissions also exceed 100 T/yr.

S. Reculatory Review

This OP is subject to the following regulatory requirements:

a. 	TDAPA 16.01.01.403 TDAPA 16.01.01.404.01(c) TDAPA 16.01.01.404.01(c)(r) TDAPA 16.01.01.404.04	Ties II Operating Permit Permit Requirements for Ties II Sources Opposituaity for Public Comment Consideration of Comments and Final Action Authority to Revise or Renew Operating Permits
i. g.	TDAPR 15.01.01.405 TDAPR 16.01.01.470 TDAPR 16.01.01.650	Obligation to Comply Permit Application Fees for Tier II Permits General Rules for the Control of Fugitive Dust
i .		Sulfur Content Limit for Distillate Fuel Cil
j.	Section 37-2506. Idaho Code	Quality Standards for Motor Gasoline and Distillate Fuel Oil-Specifications Set By American Society of Testing and Materials
k.	40 033 3455 30.07	American Society of Testing and Materials Controls and Prohibition on Gasoline Volatility

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FTTS

Fees apply to this facility in accordance with IDAPA 16.01.01.470 of the <u>Rules</u>. The facility is subject to permit application fees for Tier II permits in the amount of five hundred dollars (\$500.00). Sinclair has already submitted this payment to DEQ with the application.

Fees in accordance with IDAPA 16.01.01.525 of the <u>Rules</u> for major facilities that meet the potential to emit requirements of IDAPA 16.01.01.008.14 of the <u>Rules</u> apply to this facility. The amount which Sinclair will have to pay will not be determined until final issuance of the Tier II OP. The issued Tier II OP will establish the allowable VOC emissions, and thereby, the amount of registration fees for the facility.

RECOMMENDATIONS

Based on the review of the Tier II OP application materials and of applicable State of Idaho and federal regulations concerning the permitting of air pollution sources, the Sureau staff recommends that Sinclair Oil Corporation, in Boise, Idaho, he issued a Tier II OP for the sources that exist at the facility. An opportunity for public comment on the air quality aspects of the proposed permit shall be provided as required by IDAPA 16.01.01.404.01 of the Rules. Staff also recommends that the company be notified of the pollutant registration and registration fee requirements pursuant to IDAPA 16.01.01.525 of the Rules in writing.

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cc: Source File

COF

J. Palmer, SWIRO

ATTACHMENT A

DEQ Spreadsheet on Facility Emissions (RVP 10)

Title V Engliseer:

DM

Company Name:

Sinclair Oil Corp.

Location: Date Created: Boise, Idaho January 4, 1996

Today's Dale;

02/02/96

BOISE, IDAHO FACILITY

Calculation of Loading Rack Emissions

THIS SPREADSHEET IS DESIGNED TO ESTIMATE EMISSIONS BY MONTH

ASSUMPTIONS

- TAHKS2.0 provides the monthly average true vapor pressure of the gasoline product ANO the motar fraction of HAP constituents in the vapor phase of the gasoline product.
- 2. Trimethylponiana 2,2,4 is also known as Iso-octane.
- 3. Discussions with EPA Region X and the resulting discussions between EPA Region X and Research Triangle Park reveal that gasoline emissions of the three Xylene isomers should be appropried under a heading of Xylene (nixtures).
- 4. A comparison between the single "annual" and individual monthly runs of emissions from TANKS2.0 to derive vapor phase HAP and VOC percental revealed that the rounding of values due to significant figures predicts greater emissions for the detailed monthly run.
- 5. The most vital assumption made with this analysis is that it assumes an identical chemical composition throughout the year.

 The most accurate method for estimating all emissions would be to have semples of gasoline chemical composition for EACH of the different Ruid Vepor Pressure (RVP) categories. RVP is determined by chemical composition physical properties. Therefore, the acceptance of a single gasoline chemical composition is an important assumption for DEQ to accept. The applicant has further stated that this information would be difficult, if not impossible, to deliver because they may receive gasoline product from refineries other than their own corporation's.

JANUARY

JANUARY

JANUARY

LL = 12.46 SPM/T

where L. # loading loss, lb/1000 gail

8 = saturation factor, dimensionless, 1.0

P = true vapor pressure, psla

M = molecular weight of vapor, 1b/lb-mole

T = absolute temperature, R

.IAHUARY Gasolito Throughput, pallous por month, =

١N١	

HAPs	Vapor Mass	La.	Emissions
Compounds	Frestlen	(15/10:02)	(Ten/menth)
Benzene	0.0051	0.0234	0.23
Ethylhonzona	0.0005	0.0023	0.02
t lexano	0.0084	0,0385	0.37
Naghthalune	0.0000	2.73E-06	2.65E-05
Tokiona	0.0070	0.0321	031
Trimethylpontane (2,2,4)	0.0015	0.0069	0.07
Xylono m	0.0012	0.0055	0.05
Xylene-o	0.0005	0.0023	0.02
Xylene-p	0.0009	0.0041	0.04
Gusoline (RVP-10)	0.0749	4,4654	43.40
TOTAL	. <u> </u>	J	44.62

TOTAL-HAPS ONLY

EPA AP-42, Suction 5.2

FEBRUARY

LL = 12.46 SPM/T

FEBRUARY

FEBRUARY

where L. = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psla

M = molecular weight of vapor, Ib/lb-mole

T = absolute temperature, 'R

Li = gee Chert	
S # 600 1.00	
P # 3.03	
M = 00.40	
19438 3 E	'3 gallons

Gasoline Throughput, gallons per month =

FEBRUARY.

IIAPs	Mole	Lı	Emissions
Compounds	_fraction_	((b/10 : gal)	(Ten/menth)
Benzene	0.0053	0 0260	0.25
Ethylbenzene	0.0005	0.0025	0.02
Hexane	0.0085	0.0417	0.41
Naphihalene	0.0000	2.92E-06	2.84E-05
Tokiene	0.0073	0.0358	0.35
Trimethylpentane (2,2,4)	0.0017	0.0083	80,0
Xylene-m	0.0013	0.0064	0,06
Xylana-o	0.0005	0 0025	0.02
Xylone-p	6000	0.0044	0.04
Gasoline (RVP-10)	0.9739	4.7786	46,44
YAYAL	ł	I	1

MARCH

TOTAL TOTAL-HAPS ONLY

MARCH

MARCH L. = 12.46 SPM/T

where Lr. = loading loss, Ib/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psla

M = molecular weight of vaper, th/th-mole

T = absolute temperature, 'R

8 F 664 1.00 P = 3.22 M s 69.47 T = 511.1

Gasoline Throughput, gallons per month =

MARCH

IIAPs	Mole	1.1	Emissions
Compounds	fraction	_(lb/1919al)_	_(Ten/nenth)
Benzene	0.0054	0.0282	0.27
Ethylbenzena	0.0005	0.0026	0.03
Hoxano	0.0087	0.0454	0.44
Naphthalene	0.0000	3.11E-06	3.02E-05
Tokiena	0.0076	0.0397	0,39
Trimethylpentane (2,2,4)	0.0019	0 0099	0.10
Xytane-m	0.0013	0.0068	0.07
Xylene-o	0.0006	0.0031	0.03
Xylene-p	0.0010	0.0052	0.05
Gasoline (RVP-10)	0.9730	5.0785	49,36

TOTAL TOTAL-HAPS ONLY

1 97

14 04 1

1.1

ş 9 (1, 1 19438.3 E^3 gallons APRIL.

APRIL.

ΑI

Li. # 12.46 SPM/F

where the loading loss, for (XXX) gal-

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, pala

M = molecular weight of vapor, lb/lb-mole

T = absolute temperature, 'R

Gasolina Throughput, gallons per month =

	ť3	Ħ	έı
•	r"	z١	ш

liaps .	Mole	FT	Emissions
Compounds	fraction	. ((b) (0 x gal)	(Ten/menth)
Benzena	n ixise	1,169.0	0.31
Ethylbonzene	0 0005	0 0028	0.03
Hexaue	0.0089	0.0504	0.49
Naphthalone	0.0000	3.37E-06	3.28E-05
Toluene	0.0080	0.0453	0.44
Trimothylpentane (2,2,4)	0.0021	0.0119	0.12
Xyluna-m	0 0014	0.0079	0.08
Xyluna-a	0.0006	0.0034	0.03
Xylune-p	0.0011	0.0062	0.06
Gasuline (RVP-10)	0.9719	6.5002	53.46
TOTAL.			65.01
TOTAL-HAPS ONLY			1.55

MAY

MAY

MAY

LL = 12.46 SPM/T

where tr = loading loss, th/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psla

M = molecular weight of vapor, th/tu-mole

T = absolute temperature, 'R

Gasoline Throughput, gallons per month =

MAY

HAPs	Mole	Lı.	Emissions
Compounds	Fracilon	(Neg : 91/41).	(Tenimenti)
Benzena	0.0058	0.0360	0.35
Ethylbenzene	0.0006	0.0037	0.04
ilexane	0.0092	0.0571	0.55
Naphthulána	0.0000	3.70E-06	3.59E-05
Tokiene	0.0084	0.0521	0.51
Trimothylpentano (2,2,4)	0.0023	0.0143	0.14
Xylene-m	0.0015	0.0093	0.09
Xylene-o	0.0006	0.0037	0.04
Хувна-р	0.0011	0.0068	0.07
Gusoline (RVP-10)	0.9706	6.0196	58.51

TOTAL **TOTAL-HAPS ONLY**

L. S	500	Chart	
8 = gos		1.00	
PR		3 49	
M #		66.50	
T#		511,1	
		10438,3 (anollag C^E

Li n Bee Chert	
S = 699 1.00	
9 3.82	
T = 511.1	
19438.3 E^	3 gallons

JUNE

JUNE

JUNE

LL = 12.46 SPM/T

where Lr = loading loss, Ib/1000 gat

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psla M = molecular weight of vapor, lb/lb-mole

T = alisolido temperature, 'R

Gasoline Throughput, gallons per month =

JUNE

HAPs	Mole	1 4.	Emissions
Compounds	fraction	(lb/10 ; gal)_	(Ten/menth)
Benzene	0.0060	0 0403	0.39
Ethylbenzene	0.0008	0.0040	0.04
Hexana	0.0094	0.0631	0.61
Naphthalene	0.0000	4.00E-08	3.89€-05
Tokiene	0.0088	0.0591	0.67
Trimethylpentane (2,2,4)	0 0024	0.0161	0.16
Xylene-m	0.0016	0.0107	0.10
Xylane-o	0.0007	0.0047	0.05
Xylana-p	0.0012	0.0081	0.08
Gasolinu (RVP-10)	0.9694	6,5094	63,27
TOTAL			65 27

JULY

TOTAL-HAPS ONLY

JULY

JULY LL = 12.46 SPM/T

where L. = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psia

M = molecular weight of vapor, lb/lb-mole

T = absolute temperature, 'R

Gasoline Throughput, gallone per month =

IIAPs	Mole .	lı.	Emissions
Compounds	_ Fraction _	. (Meg : 91/4f) .	(Ten/menth)
Benzena	0.0062	0.0451	0.44
Ethylbenzene	0.0007	0.0051	0.05
Hexane	0 0096	0.0699	0.68
Naghthalone	0.0000	4.34E-06	4.21E-05
Tokuana	0.0091	0.0662	0.64
Trimethylpentane (2,2,4)	0 0026	0.0189	0.18
Xylene-m	0.0017	0.0124	0.12
Xylana-o	0.0007	0.0051	0.05
Xylano-p	0.0013	0.0095	0.09
Gasoline (RVP-10)	0.9682	7.0451,	68.47
TOTAL			70.73
TOTAL-HAPS ONLY			2.28

66.54 19438.3 E^3 gallons

see Chart. 4.48 66,57 511.1 19438.3 E^3 gallons

garage.

AUGUST

AUGUST

AUGU5:

Li = 12.40 SPM/T where Li = loading loss, Ib/1(XX) gat

S = substalion factor, dimonslopless, 1.0 P = hue vapor pressure, psla

M = molecular weight of vapor, fixfilt-mole

T = absolute temperature, 'R

Gasolina Throughput, gallons por month =

AUGUST

HAPs	Mole	l ₁	Emilssions
Compounds	Fraction	_([발19 : gal)_	(Itan/menth)
Benzene	Tako	0 0429	0.42
Ethylbenzone	0.0008	0.0042	0.04
Hexane	0 0095	0 0669	0 65
Haphthalona	0.0000	4.20E-06	4.086-05
Tokione	0.0000	0.0634	0.62
Februitrylpontano (2,2,4)	0.0025	0.0176	0.17
Xylone-m	0.0016	0.0113	0.11
Xylunu o	0 0007	0.0049	0.05
Xylene-p	0.0012	0.0084	0.08
Gasolino (RVP-10)	0.9687	6 8106	66.27
TOTAL			68.41

SEPTEMBER

TOTAL-HAPS ONLY

SEPTEMBER

SEPTEMBER

Lu = 12.46 SPM/T where Lu = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psia

M = molecular weight of vapor, th/th mole

T = absolute temperature, 'R

Gasoline Throughput, gallons per month =

SEPTEMBER

HAPs	Mole	l.ı.	Emissions
Compounds	Fraction	. (1941) 1 gan .	(Ten/menth)
Benzene	0.0059	0.0380	0.37
Ethylbonzono	0 0XX06	0.0039	0.04
Huxane	0.0093	0.0598	0.58
Naphthalena	0.0000	3.83E-06	3.73E-05
Tokiena	0.0085	0.0547	0.53
Trimethylpentane (2,2,4)	0.0023	0.0148	0.14
Xylono-m	0.0015	0.0096	0.09
Xyluna-a	0.0007	0.0045	0.04
Xylens-p	0.0012	0,0077	0.08
Gasolina (RVP-10)	0.9700	6.2396	60.64
TOTAL.		*	62.52
TOTAL-HAPS ONLY			1.88

Li 4 grang gog Chart
S = 800
P= 434
M + 60.56
T 5
40429 2 CA2
19438.3 E^3 gallons

 OCTOBER

OCTOBER

OCTOBER

LL = 12.46 SPM/T

where LL = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psla

M = molecular weight of vapor, lb/lb-mole

T = absolute temperature, 'R

Gasoline Throughput, gallons per month, =

OCTOBER

IIAPs	Mola	l.	Emissions
Compounds Benzene	Fraction	.([<u>[]]]</u> [] [] [] [] [] [] [] [] [] [] [] [] []	
Ethylbenzena	0.0006	0.0029	0.03
Hexane	0.0090	0.0515	0.50
Naphthalene	0.0000	3.41E-06	3.31E-05
Tokuna	0.0080	0.0457	0.44
Trimethylpentane (2,2,4)	0.0021	0.0120	0.12
Xylene-m	0.0014	0.0080	0.08
Xylene-o	0.0006	0.0034	0.03
Xylene-ρ	0.0011	0.0063	0.06
Gasolino (RVP-10)	0.9747	5,5567	54.01
TOTAL	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	····	65.58
TOTAL-HAPS ONLY			1.57

NOVEMBER

NOVEMBER

NOVEMBER

LL = 12.46 SPM/T

where L. = loading loss, Ib/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psla

M = molecular weight of vapor, lb/lb-mole

tes ... Street Continue samplifier out amounts trained detect

T = absolute temperature, 'R

Gasolina Throughput, gallons per month, =

NOVEMBER

IIAPs	Mole	I.	Emissions
Compounds	frasilen_	_(14/19 1 04/1)_	(Ten/menth)
Benzene	0 0053	0.0267	0.26
Ethylbenzene	0,0005	0.0025	0.02
Hexana	0,0086	0.0434	0.42
Naphthalone	0.0000	3.01E-08	2.92E-05
Tokiene	0.0075	0.0378	0.37
Trimethylpentane (2,2,4)	0.0018	0.0091	0.09
Xylene-m	0.0013	0.0066	0.06
Xylene-o	0.0005	0.0025	0.02
Xylane-p	0.0010	0.0050	0.05
Gasolino (RVP-10)	0.9735	4.9119	47.74
TOTAL			49 04

TOTAL

TOTAL-HAPS ONLY

49.04 1.30

gride.

Li = 660 Chart	X
S = 600 1 00	
P = 3.53	÷ -
M # 66,50	1
Ta 511.1	į.
	Ŕ
	E^3 gallons

L = see Chart S = see 1,00 P = 3,11 M = 66,40 T = 511,1 19438,3 E^3 gallons DECEMBER L. = 12.46 SPM/T DECEMBER

DECEMBER

where Li = loading loss, lb/1000 gal

8 = saturation factor, dimensionless, 1.0

P # true vapor pressure, psla

M = molecular weight of vapor, b/h-mole

If absolute temperature, 'R

Gasoline Throughput, gallons per month =

DECEMBER

IIAP#	Mole	Li	Emissions
Compounds	fracilon	. ((40 t 91 W)).	(Ten/menth)
Benzane	0.0052	0.0243	0.24
Ethylbonzene	0.0005	0.0023	0.02
l lexane	0.0084	0.0392	0.38
Maphthalene	0.0000	2.78E-06	2.70E-05
Tokiene	0.0071	0.0331	0.32
frimothylpentana (2,2,4)	0.0016	0.0075	0.07
Xylono-m	0.0012	0.0056	0.05
Xylone-o	0.0005	0 0023	0.02
Xylene-p	0.0009	0.0042	0.04
Gasoline (RVP-10)	0.9746	4.5469	44.19

TOTAL TOTAL-HAPS ONLY

ANNUAL LOADING RACK EMISSIONS (RVP 10 with Single HAP)

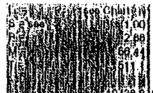
VOC. Aggreg HAP Single HAP | Single HAP | Single HAP |

Emissions | Endsstons | texano Emiss | Toluene |

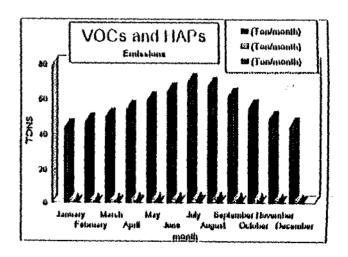
(Tonly1) | (Tonly1) | (Tonly1) | (Tonly1) |

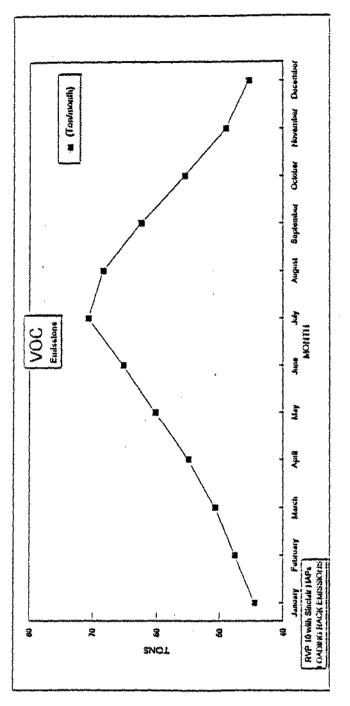
675.111 | 19.35 | 6.00 | 4.45

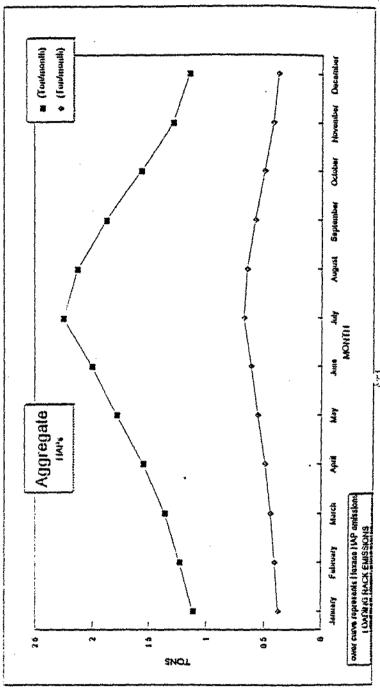
	Aρgregata	Hexane	VOC
	HAPs	Embalona	Emisshus
	(Tou/month)	(Torvinonth)	(Torvinonth)
lamiary	1.12	0.37	44.52
Folymary	1.24	0.41	47.68
March	1.37	0.44	50.73
April	1.55	0.49	55.01
May	1.78	0.65	60,28
hma	2 (x)	061	65.27
hdy	2.26	0.68	70.73
August	2.13	0.65	150,41
Suptombut	1.86	. 058	62.52
Octobus	1 67	0.60	55.50
Hovember	1.30	0.42	49 04
լյությերու	1.15	0.38	45.34



E^3 gallons







ANNUAL AVERAGE VAPOR PHASE HAP FRACTION METHOD:

Notes and concerns:

- 1. The Sincialr submittat for the floise facility contained LIAP and VOC vapor phase emission estimates that appear to be applicable for the Burley facility. The overall ambient climate conditions are colder for Burley and thus, this results in the underestimation of emissions from the loading rack. Decause the requested throughputs place Sinciair's potential to emit AT the MACT standard applicability threshold of 25 tone per year aggregated LIAPs, either the requested throughputs must decrease slightly or a change in the estimation methodogy for some emission sources must be altered to reduce the facility-wide cap for allowable emissions. Le. DEQ's additional 0.68 TPY aggregatives and the 25 toy cap.
- 2. EPA has recently made available revised interim emission factors to estimate fugitive emissions from Marketing terminats. The document is titled New Equipment Leak Emission Factors for Petroleum Refineries, Gasoline Marketing, and Oil & Gas Production Operations, February 1995. These emission factors are presented both for the screening method (where a known concentration of VOCs is emitted) and the "average" emission factor method, which requires no monitoring data). The "average" emission factor method is to be used just as in the applicant's enhanted. These 1995 emission factors will replace the applicant's emission estimates that employed EPA AP-42 emission factors published in 1980.
- EPA AP-42 Section 5.2 Transportation and Marketing of Petroleum Products, January, 1995. This relationship was used to estimate
 annual VOC and HAP loading rack emissions. The document states that it has within a + or 30 percent probable error.

ANNUAL LOADING RACK EMISSIONS using an ANNUAL AVERAGE MOLE FRACTION **GASOLINE SERVICE**

LL = 12.48 SPM/T

where L. = loading loss, Ib/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure of liquid delivered, psla M = molecular weight of vapor, lb/lb-mole

R., enderequest think knild temperature. "R

I v # egg Chwi	
6 7 400 (A)	
P # 3.54	
M = 68.60	
T = 511,1°	
233260 0 E^3	Qallons.

ANNUAL Gasoline Throughput, gallons per year =

ANNIIAI

TIAPS	Mole	L	Emissions
Compounds	fraction_	(MM10 1 0 M).	.(Tenyean).
Benzene	0 0056	0.0321	3.75
Ethylbanzene	0.0005	0.0029	0,33
Hexane	0,0090	0.0516	6.02
Naphihalana	0.0000	3.42E-06	3.99E-04
Toluene	0,000	0.0459	5.35
Irimethylpentane (2,2,4)	0.0021	0.0120	- 1,40
Xylene-m	0.0014	0,0080	0.84
Xylena-a	0 0006	0,0034	0.40
Xylene-p	0.0011	0.0063	0.74
Gasoline (RVP-10)	0.9717	5,5741	650.11
TOTAL		<u> </u>	669 04
TOTAL-HAPS ONLY			10.01

XYLENE (mixture) 2.07 Ions per year

> HAPs≥than Sinclair.submittal 0.68 TPY

DISTILLATE FUEL OIL SERVICE

LL = 12.46 SPM/T

where tu = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure of fiquid delivered, pala M = molecular weight of vapor, lb/lb-mole

T = absolute bolk flydd temperature . 'R

san Chart

S = 500 0.0053

129.04

0.04 tons per year

ANNUAL Distillate Fuel Oil Throughput, gallons per year =

337260.0 E^3 gallons

ANNUAL.

IIAP*	Mole	I.s.	Emissions	
Compounds Naphilalane	fraction	(12/19 19al) 8.34E-06	_(TentyEAR).	
Tohjene	0 0102	0.0002	0.029	
Xylene-m	0.0115	0.0002	0.032	XALENE (wystika)
Xylene-o	0.0031	0.0001	0.009	0.04 tons per ye
Xylone-p	0 0000	0.0000	0.000	
Qistiffate Fuel Oil #2	0.8747	0.0163	2,740	
TOTAL	1.0000		2.811	
TOTAL-HAPS ONLY			0.071	

Storage tank emissions are comprised of: Willidrawal, roof-flitting, rim-seal, and standing losses. Gasoline Storage Tanks

Tanks 401, 404, 411, 421

<u>. 1 2 1 10 2 2 2 1 1 2 2 3 2 3 1 1 2 4 1 </u>	7274	
	Hourly	Annual
IIAPs	Emissions	Emissions
Compounds	(lb/ly)	(TONYEAR)
Benzene	0 (x030	0.0131
Ethylbenzene	0.0007	0.0030
Hexane	0.0045	0.0198
Nothitistoto	0.0000	0.0001
Tokiono	0.0057	0 0251
Fitmothylpontane (2,2,4)	0.0013	0 0056
Xylene-m	0.0016	0.0069
Xylone-o	0.0010	0 (8)44
Xylana-p	0.0014	0.0062
Gusolino (RVP-10)	0 4639	2 0320
TOTAL VOCS	0.483	2116
TOTAL=HAPS ONLY	0.015	0.004

For the four (1) Tanksi		Charge and the desired to the
TOTAL VOCS	1.033	8 465
TOTAL HAPS ONLY	9 977	0.337

Tanks Transmix and Prover

11 1 1

Emissions are neatly identical (per applicant's submittal) to each other

20 the Iranspile Tank results will be used for both tanks.

	lourly	Annual
IIAPs	Emissions	Emissions
Compounds	<u> </u>	(Ten/YEAH)
Donzone	0 0003	0.0012
Ethylborizona	0.0000	0 0001
llexane	0.0004	0.0010
Naphithalono	O CXXXX	O (XXXX)
Tokume	0.0001	0.0003
Edmollyhontano (2,2,4)	1000	0 0005
Xylono-m	0.0001	0.0003
Xytene-a	0.0000	0.0001
Xylene ρ	0.0001	0.0002
Gasoline (RVP-10)	0.0478	0.2093
TOTAL VOCE	0 0488	0.2139
TOTAL-HAPS ONLY	0.0011	0.2133

	For the two (2) Tanksi		*
ļ	TOTAL VOCS	0.0977	0.4279
	TOTAL: HAPS ONLY	0.0021	0.0094

Tank 431 Hourty Annual HAPs Emissions Emissions Compounds Benzene <u> (15/1)</u> 0.(7)28 TOWYEAH 00124 Ethythonzone 0.0005 0.0021 0.0044 Hoxane 0.0192 Naphthalone 0.0000 0.0001 Toluone O (x)48 0.0212 frknothylponta 0.(X)11 0.0050 Xylono m 0.0012 0.0051 Xylona-a 0.0007 0.0030 Xylone-p 00000 0.0044 Gasolmo (RVP 0.4614 2.0208

0 4779

0 0 166

2.0933

0.0725

TOTAL VOCS

MOTALIHAPS

<u>.</u>

DISTILLATE FUEL OIL STORAGE TANKS

TANKS 402, 405, 406

	Hourly	Annual
IIAPs	Emissions	Emissions
Compounds	(th/hr)	(Tell/YEAR)
Naphilialene	0.0001	EXXX 0
Tokiene	. 0.0011	0.0049
Xyluno in	0.0013	0.0057
Xylene-o	0.0004	0.0015
Distillato Firel Oil #2	0 1085	0.4752
TOTAL VOCE	0.1113	0.4876
TOTAL-HAPS ONLY	0.0028	0.0124

For the three (3) Tanksi.	and an Alderian areas	
TOTAL VOCS	0.3340	1.4628
TOTAL::HAPS ONLY_	0 0085	0.0371

STORAGE TANK SUMMARY

	Hourly	Annual
IIAPs	Emissions	Emissions
Compounds	(/)	(Ten/YEAR)
Benzene	0 0153	0.0672
Ethylbenzene	0 0033	0.0143
Hexane	0 0234	0.1023
Naphthalane	0.0003	0.0014
Tokiene	0.0312	0,1368
Filmethylpentane (2,2,4)	0.0065	0.0284
Xylane-m	0.0115	0.0504
Xylene-o	0.0058	0 0253
Xylene p	0.0068	0 0297
Gasoline OR Fuel Oil	2.7361	11.9929
TOTAL VOCS	2 8422	12.4487
TOTAL-HAPS ONLY	0.1041	0 4558

Xylenes (mixture)

0.1055 Tons/yr

a Classiff of A

FUGITIVE HAP EMISSIONS (Gasoline Service)

		VOC Emis	IIAP Emission	VOC emis	HAP Emission
	I Iquid Mass	Rate	Ralo	Rate	Rale
HAP Component	Fraction	(lb/kr)	([b/hr]	(Tonsiyear)	(Yons/year)
Banzana	0.0188	0.0017	.0.0017	0.0076	0.0076
Ethylbenzone	0.0207	0.0019	0.0019	0 0083	0.0083
l lexane	0.0181	0.0017	0.0017	0.0073	0.0073
Naphihatene	0.0013	0.0001	0.0001	0.000\$	0.0005
Tokiene	0.0972	0.0090	0.0090	0.0392	0 0392
Trimsthipontane 2,2,4	0.0161	0.0014	0.0014	0.0061	0.0081
Xylone (-m)	0.0448	0.0041	0.0041	0.0181	0.0181
Xylene (-o)	0.0349	0.0032	0.0032	0.0141	0.0141
Xylena (-p)	0.0448	0.0041	0.0041	0.0181	0.0181
Gaselina (RVP 10)	0.7043	0.0649	0.0000	0.2841	0.0000
Tolais:	1.0000	0.0921	0.0272	0.403	0.118

FUGITIVE HAP EMIS	SIONS (Dist	illate Fuel (Dil Service)_	A Pr. 1 out 18 Dis server and 18 District	
	!			VOC Emis	IIAP Emission
	Liquid Mass	Rate	Raio	Rato	Rate
HAP Component	fraction	(lb/lir)	(lb/hr)	(Yons/year)	(Tons/year)
Benzene	0.000028	0.000004	0.000004	0.000019	0.000019
Naphihalana	0.001700	0.000260	0,000260	0.001139	0.001139
Tokiene	0.000200	0.000031	0.000031	0.000134	0.000134
Xylone (-m)	0.000300	0.000046	0.000046	0.000201	0.000201
Xylene (-a)	0.000600	0.000092	0.000092	0.000402	0.000402
Xylono (-ji)	0.000000	0.000000	0000000	0.000000	0,00000
Olstillate Fuel Oil #2	0.997172	0.152567		0.666242	<u> </u>
Totals:		0.1530	0.00043	0.6701	0.0019

FUGITIVE EMISSIONS

The estimate of fugitive emissions is based on the information provided by the applicant and newly revised "interim" AP-42 emission factors.

Notes and Comments:

40.015

- 1. Sinclair submittal appears to assume that fugitive emissions occur for 2000 hours per year. It emissions from these sources occur for 8760 hours per year, then the a linear ramping of emissions would predict (IAP emissions of > 25 TPY for fugitive sources alone. This would mean that since all point and fugitive (IAP emissions must be accounted for in applicability for a major (IAP source, that a Tier II synthetic minor option is not an option for Sinclair's facilities.
 Therefore, this analysis will incorporate the newest AP-42 emission factors available and an assumption of 8760 hours per year. No additional documentation on the 2000 hour/year assumption was listed in the application.
- 2. The number of emissions sources is provided by the applicant.

		Emission	Total VOC	Assumed	Total VOC
:	1	Factor	Emissions	Hours/yr	Emissions
	# of Sources	(lb/hr/source	(tb/tu)	Operation	(Tons/year)
GASOLINE (light liquid):					
Pump Seals	7	1.2E-03	0.008	8760	0.037
Valves	103	9.5E-05	0.010	8760	0.043
Flanges	230	1.7E-05	0.004	8760	0017
Process Orains *1	1	0.07	0.070	8760	0.307
OilWater Separator	0		0.000	8760	0.000
·		Lb/hr totals:		You/yr total	0,403
DISTILLATE FUEL OIL	A	. 50 6/2/32			
(heavy liquid) *2					
Pump Seals	4	2.9E-02	0.115	8760	0.502
Valves	58	5.5E-05	0.003	8760	0.014
Flanges	145	2.4E-04	0.035	8760	0.154
Process Drains *1	O	0.07	0,000	8760	0.000
Oit/Water Separator	0		0.000	8760	0.000
_		Lb/hr totals:		Tenlyr tetal	
	Fugitive Gr	rand Total (0.25	lb/hr	1.07

*1 Emission factor for the drain is from AP-42 Table 9.1-2 Fugitive Emission Factors for Petroloum Refineries, October/1980

*2 Distillate feet of emission factors are from the August 1995 AP-42 Interim Emission Factors for Oil and Gas Production Operations

HAP Emissions = VOC Emission Rate * HAP Liquid Mass Fraction

Emissions and Allowable Throughput Summary - Bolse, Idaho Facility

SOURCE		ALLOWABLE	EMISSIONS		ALLOV	VABLE	<u></u>
IDENTIFICATION	Volatile O	rganic	Aggregated		THROUGHPUT		Allowable Product Type
I	Compounds		Hazardous Air Poliulants				
	(<u> </u> <u> </u>	(Yensiyr)	(lb/hr)	(Tons/yr)	(Gallons/day)	(Gallons/yr)	
STORAGE TANKS							
Tank 401	0.48	2.12	0.019	0.084	N/A	58,254,000	Gasoline
Tank 404	0.48	2.12	0.019	0.084	N/A	58 254 000	Gasolina
Turk 411	0.48	2.12	0.019	0.084	N/A	58,254 (XX)	Gasoline
Tank 421	0.48	2.12	0.018	0.084	N/A	58,254,000	Gasoline
Tank 431	0.48	2.Ω9	0.017	0.073	N/A	58,254,000	Gasolina
	2.41	10.56	0.09	0.41		,,	
Tank 402	0.11	0.49	0.003	0 012	N/A	168,630,000	Distillate Fuel Oil
Tank 405	0.11	0.49	0.003	0.012	N/A	168,630,000	Distillate Fuel Oil
Yank 406	0.11	0.49	0.003	0.012	N/A	168,630,000	Distillate Friel Oil
	0.33	1.46	0,01	6,04	,		Parameter & rich end
Transmix Tank 400	0.05	0.21	0.001	0.005	N/A	38,080	Gasolina
Prover Tank	0.05	0.21	0.001	0 005	N/A	220,200	Gasolina
	0.10	0.43	0,002	0.009	1117		**************************************
LOADING RACK							
Gasoline Service	152 75	669 04	4.32	18.93	638 400	233,016,000	Gasolina
Distillato Fuol Oil Sorvico	0.64	2.01	0.0004	0.002		337,260,000	Distillate Fuel Oil
	153.39	671.85	4.32	18,94		,	**************************************
FUGITIVES	,					<u> </u>	
Gasetine Service	0.092	0.403	0.027	0.119	N/A	I IVA	
Distillate Fuel Oil Service	0.153	0.670	Ω,ΩΩ()	0.002	NIA	N/A	
	0.245	1.074	0.026	0.121	,,,,		
Total Emissions:	156,48	685.37	4.46	19,51			

Notes: N/A stands for Not Applicable

Annual storage tank emissions are derived from the EPA/API TANKS2.0 program.

TANKE PROGRAM 2,0 EMTESTONS REPORT - DETAIL FORMAT TANK IDENTIFICATION AND PHYSICAL CHARACTERISTICS

Identification		
Identification No.:	Tunk 401	
City:	Boise	
Stute:	10	•
Company:	Sinciair Oil Corporation	
Type of Tank:	External flouting Roof	
Tank Dimensions	·	
Diameter (ft);	66	
Volume(gallons):	839400	
intionetal	69	
Paint Characteristics		
Shell Condition:	i ight Rust	
Shell Color/Shade:	White/White	
Shell Paint Condition:	Good	
Roof Characteristics		
Roof Type:	Double Deck	
fitting Category:	Typical	
Tank Construction and Rim	-Seal System	
Construction:	Vet ded	
Primary Seal:	Hechanical Shoe	
Secondary Seal:	#im-akvalfeq	
Roof fliting/Status		Quantity
	um. Well)/Weighted Hech. Actuation, Gask.	1
Unstatted Guide-Pole Well,	·	1
	/Adjustable, Double-Deck Roofs	10
Ruof Drain (3-in. Diameter	The state of the s	į
	/Weighted Hech. Actuation, Gask.	1
	B-in. Diam.)/Weighted Mech. Actuation, Gask	1
	Diam.)/Milliotted Cover, Migask.	•
Access Hatch (24-in. Diam	.)/Holted Cover, Gasketed	1

NOTE: THIS IS THE SAME REPORT AS FOR TANKS:

404
411
421
434 (43) is a different bond size).

NOTE: WILL NOT TRINT OUT 69.4 TURNOVERS PER TE.

(69.4 TURNOVER) (839,400 Gal) = 58,254,361
THAT SEAR EACH TI

Meteorological Data Used in Emission Calculations: Boise, Idaho

ENIBELONE REPORT THE PRINT FORMAT LIQUID CONTENTS OF STORAGE TANK

	6 78.11 Option 2: A=6.9050, B=1211.033, C=220.790 5 106.17 Option 2: A=6.9050, B=1424.255, C=213.210 7 66.00 Option 4: RVP=10.00, ASIM Slope=2.5 0 86.17 Option 2: A=6.8760, B=1171.170, C=224.410 11 114.22 Option 1 0 92.13 Option 2: A=7.1463, B=1831.571, C=211.821 0 92.13 Option 2: A=7.9690, B=1426.266, C=215.410 4 106.17 Option 2: A=7.0690, B=1426.266, C=215.410 6 106.17 Option 2: A=6.9980, B=1476.403, C=213.690 1 106.16 Option 2: A=7.0206, B=1474.603, C=213.690
90 Pre:	.9050, .9750, .9750, .8760, .9540, .9540, .9540,
or Vap	7277 PAPP
Hol. Basis for Vapor Pressure Veight Calculations	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Hol. Velghi	76.11 66.00 86.17 114.22 128.14 92.13 106.17
Vapor Hass Fract.	0.0056 0.0056 0.0056 0.0050 0.0000 0.0000 0.0000 0.0000
Liquid Mass Fract.	0.0188 0.0207 0.0207 0.0161 0.00151 0.0012 0.0448 0.0349
Vapor Hol. Ueight	66.499
e xe	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>
Liquid Dally (iquid Surf. Butk Temperatures (deg f) Temp. Vapor Pressures (psia) Month Avg. Hin, Hax. (deg f) Avg. Nin. Hax.	**************************************
Vapor P	3.5387 0.9620 0.0651 1.5952 0.472 0.0017 0.1018 0.1053
Liquid Bulk Temp. (deg 5)	5.12
Surf. (deg f) Kax.	53.12 47.11 59.13
iquid Hures Min.	47.11
Delty (Tempers	53, 12
Hooth	¥II
Liquid Dally liquid Surf. Bulk Temperatures (deg f) Temp. Vapor Pressures (psia) Hoi. Hass Hoss Hol. Basis for Vapor Pressure Hixture/Component Honth Avg. Hin, Hax. (deg f) Avg. Hin. Hax. Veight Fract. Fract. Veight Calculations	Gasolina RVF10 Ulth HAPs Benzene Ethytenzena Gasolina (RVP 10) Hexane (-n) Isocrtane Hydrinatene C-10 H-8 foluena Xytene (-m) Xytene (-u)

TANKE PROGRAM 2,0 ENTERIONE REPORT - DETAIL FORMAT DETAIL CALCULATIONE (AP-12)

Annual Emission Calculations

Rim Seal Losses (tb):	482,7069
Seal factor (lb-mole/ft yr (mph)^n):	0.2000
Average Wind Speed (aph):	8.8
Sent-related What Speed Exponent:	1,60
Value of Vapor Pressure functions	0.0687
Vapor Pressure at Daity Average Liquid	
Surface Temperature (psia):	3.538675
Tank Diameter (ft):	04
Vapor Molecular Weight (lb/lb-mole):	66.498576
Pruduct factor:	1.0000
Withdrauat Losses (tb):	181.5639
Annual Het Throughput (gat/yr):	58254360
Shell Clingage Factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (th/gal):	0.0000
Tunk Diameter (11):	60
Hoof flitting tosses (lb):	3568.2285
Value of Vapor Pressure function:	0.0687
Vapor Holecular Weight (1b/lb-mole):	66,498576
Product factor:	1,0000
lot. Roof Fitting Loss Fact.(ib-mole/yr):	780.6081
Average Wind Speed (aph):	6.8

Roof fitting/Status	Quantity	Roof fitting Loss Kfu (ib-mole/yr)	i factor s Kfb (lb-mole/(y	rapk^n)) m
Vacuum Breaker (10-in. Diam. Welt)/Weighted Mech. Actuation, Gask.	1	1.20	0.17	1.00
Unstatted Guide-Pate Well Alagasketed Stiding Cover	1	0.00	67.00	0.98
Roof teg (3-in. Dismeter)/Adjustable, Double-Deck Hoofs	10	0.25	0.07	1.00
Roof Drain (3-in. Diameter)/Open	1	0.00	7,00	1.40
Rim Vent (6-in, Diameter)/Weighted Mech. Actuation, Gask.	: 1	0.71	0,10	1.00
Gauga-Natch/Sample Vell (8-in. Diam.)/Weighted Hech. Actuation, Gask	1	0.95	0.14	1.00
Gauge-float Well (20-in. Diam.)/Whitolied Cover, Ungask.	i	2,30	5.90	1.00
Access Hatch (24-in. Diam.)/Boited Cover, Gasketed	i	0.00	0.00	0.00

Total Losses (tb):

4232.50

TANKS . JGRAM 2.0 ENTESTONS REPORT - DETAIL FORMAT THOUVIDUAL TANK ENTESTON TOTALS

Ammial Emissions Report

	tosses (the	:.):			
Liquid Contents	Total Withdrawat	Roof-fitting	Rim-Seat	Starkling Starkling	lotal
Gasotine RVP10 With HAPs	181,56	3568,23	482.71	4050.94	4232,50
Bentene	3.41	20.03	2.71	22.74	26.16
Ethylbenzene	3.76	1.95	0.26	2.21	5.97
Gasotine (RVP 10)	127.88	3467,21	469.04	3934.25	4064.13
Hexana (-n)	3.29	31.98	4.33	36.31	39.60
Isooctane	2.74	7.48	1.01	8.49	11.23
Rephthatene C-10 H-8	0.24	0.00	0.00	0.00	0.24
Tuluena	17.65	28.59	3.87	32.46	50.10
Xylene (-m)	8.43	5.05	83.0	5.74	13.87
Xyteria (-o)	6.34	2.14	0,29	2,43	8.76
Xylene (-p) or Para-Xylene	8.13	3.79	0.51	4.30	12.43
Total:	181.56	3568.23	482,71	4050,94	4232.50

TANKS PROGRAM 2.0 ENISSIONS REPORT - DETAIL FORMAT TANK IDENTIFICATION AND PHYSICAL CHARACTERISTICS

Identification

Identification No.:

301

City:

Burley

State:

10

Company:

Sinclair Oil Corp.

Type of Tank:

External floating Roof

Tank Dimensions

Diameter (ft):

60

Volume(gullons):

638437

lumovers:

163

Paint Characteristics

Shell Condition:

Light Rust

Shell Color/Shade:

thite/thite

Shell Paint Condition: Good

Roof Characteristics

Roof Type:

Double Beck

fitting Category: Typical

lank Construction and Rim Seal System

tiefiled

Constructions

Hechanical Shoe

Primary Seal:

Secondary Seat:

R im mount ed

Roof fleting/Status	Quant I ty
Vacuum Breaker (10-in, Diam, Hell)/Heighted Hech, Actuation, Gask.	1
Unstatted Guida-Pole Well/Ungasketed Sliding Cover	1
Roof Leg (3-in. Dimmerer)/Adjustable, Double-Deck Roofs	10
Roof Drain (3-in. Diameter)/Open	1
Rim Vent (6-in, Dispeter)/Heighted Hech, Actuation, Gask,	1
Gange-Hatch/Sample Hell (8-in. Diam.)/Heighted Hech. Actuation, Gask	i
Gauge-Float Well (20-in, Diam.)/Unbolted Cover, Ungask.	1
Access Natch (24-in. Diam.)/Bolted Cover, Gasketed	i

Meteorological Data Used in Emission Calculations: Pocatello, Idaho

ATTACEMENT C

Spreadsheet on Radian Corporation Gasoline Study

Singlair Oil Corporation Boil			·····		UDY ON GA		MPOSITIO	<u> </u>	
	HAPs prese	nt in UNLEA	DED gasolin	e (Oliver an	d Peoples, 1	985 Study)			
	(WEIGHT %)	_						•
		Ethylbenze	l-lexane	Isooclane	Naphihalen	Toluene	Xylene(-m)	Xylene(-o)	Xylene(-p)
Summer Regular	1,93	2.05	1,95	3.01	0	10.32	4.58	3,39	4.58
Summer Premium	2.15	2.1	1,23	6.8	0	14.22	4.72	3.69	4.72
Winter Regular	1.82	2.08	1,66	0	0.25	9.11	4.375	3.59	4.375
Winter Premium	2,07	2.14	1.14	0	0.21	12,92	4,8	3,66	4,8
					7				
Summer Blends Average	2.04	2.075	1.59	4,905	0	12.27	4.65	3.54	4.65
Winter Blends Average	1.945	2.11	1.4	0	0.23	11,015	4.5875	3,625	4.5875
% Change in HAP concent. (winter with summer as base)	-4.66	1.69	-11.95	-100.00	ERR	-10,23	-1.34	2.40	-1.34
Regular Average	1,875	2,065	1.805	1.505	0.125	9.715	4.4775	3.49	4.4775
Premium Average	2.11	2.12	1,185	3.4	0.105	13.57	4.76	3.675	4.76
Total Average Value	1.99	2.09	1.50	2.45	0.12	11.64	4.62	3,58	4.62

Unincluded HAP from Study

Summer Regular	0.19
Summer Premium	0.17
Winter Regular	0,25
Winter Premium	0.19

Annual Eulesions Report

	tosses (ths.):	7.			
Liquid Contents	Total Withdrawal	Roof-fitting	Rim-Scal	latal Standing	letal
Gazuline (NVP 10) w/ Sircials	269.16	3751.46	503,48	4524.94	4524.09
Benzeite	5.06	20.31	2.73	25.03	26, 10
Ethylbearena	5.57	-6.1	0.26	2.17	7.74
Gasoline (KVP 10)	189.57	3650.23	489.89	4140.12	4329.65
Hexage (-n)	4.87	32.69	4.39	37.07	41.95
1 Scoot and	4.06	7.02	96.0	3.96	12.03
Hachtelein C.10, H.B.	0.35	0.00	0.0	0.00	5,0
Tolinene	26.16	28,53	3,83	32,35	58,52
Xylena (·m)	12,06	16.9	0.67	5.64	17.69
Xyleque (-v)	9.39	5.63	0.20	2.31	11.76
Kytun (4) warny ann	12.06	3.72	0.50	4.22	16.28
	269.16	3751.46	503.48	4554.94	4524.09

ATTACEMENT B

ASTM D4814-95a Standard Specification and Average Annual Allowable RVP Requirement

TANKE PROGRAM 2.0 ENTESTONS REPORT - DETAIL FORMAT TANKE PROGRAM 2.0

Mixture/Conponent	Month.	•	ntures	(deg f)	Liquid Bulk Teny). (deg f)	•	Pressures Min.	(psia) Hax,	Liquid Muss Fract.	Hass		Basis for Vapor Pressure Calculations
Gasutine (RVP 10) w/ Sinctair Renzene Ethylbenzene Gasotinu (RVP 10) Hexane (-n) Isooctane Naghibatene C-10, H-8 Totuene	ALL	48.66	42.21	55.11	46.62	3.2269 0.8454 0.0723 4.0560 1.4133 0.3637 0.0014 0.2297 0.0868 0.0656	H/A H/A H/A H/A H/A H/A H/A	H/A H/A H/A H/A H/A H/A H/A	0.0188 0.0207 0.7043 0.0181 0.0151 0.0013 0.0972 0.0448 0.0349 0.0448	0.0005 0.9730 0.0087 0.0019 0.0000 0.0876 0.0013	106.17 66.00 86.17 114.22 128.16 92.13 106.17 106.17	Option 2: A=6.9050, B=1211.033, C=220.790 Option 2: A=6.9750, B=1424.255, C=213.210 Option 4: RVP=10.00, ASIH Stope=2.5 Option 2: A=6.8760, B=1171.170, C=224.410 Option 1 Option 2: A=7.1463, B=1831.571, C=211.821 Option 2: A=6.9540, B=1344.800, C=219.480 Option 2: A=7.0090, B=1426.266, C=215.110 Option 2: A=6.9980, B=1474.679, C=213.690 Option 2: A=7.0206, B=1474.403, C=217.773

TANKS PROGRAM 2.0 EMISSIONS REPORT + DETAIL FORMAT DETAIL CALCULATIONS (AP-42)

Annual Emission Calculations

Rim Seat Losses (ib):	503.4772
Seal factor (tb-mole/ft yr (mph)^n):	0.2000
Average Wind Speed (aph):	10.2
Seal-related tilled Speed Exponent:	1.00
Value of Vapor Pressure function:	0.0419
Vapor Pressure at Daily Average Liquid	
Surface lesperature (psia):	3.226885
Tunk Diameter (ft):	60
Vapor Hotecular Veight (1b/tb-mole):	66.472271
Product factors	1.0000
Withdraual Losses (1b):	269, 1584
August Het Throughput (gal/yr):	86359011
Shell Clingage factor (bb//1000 sqft):	0.0015
Average Organic Liquid Density (HJ/gal):	0.0000
lank Diameter (ft):	03
Roof fitting Losses (ib):	3751.4586
Value of Vapor Pressure function:	0.0619
Vapor Hotecular Weight (lb/lb-mole):	66.472271
Product factor:	1.0000
Yot. Roof fitting toss Fact. (lb-mole/yr):	912,0145
Average Wind Speed (uph):	10.2

Roof fitting/Status	Quantity	Roof fitting toss Kfu (ib-mole/yr)		raph^a)) m
Vacuum Breaker (10-in, Diam. Neil)/Neighted Mech. Actuation, Gask.	1	1.20	0.17	1.00
Unstatted Guide-Pole Well/Imgasketed Stiding Cover	i	0.00	67,00	0.98
Roof Leg (3-in, Diameter)/Adjustable, Double-Deck Roofs	10	0,25	0.07	1.00
Roof Dealn (3-in. Dimmeter)/Open	· 1	0.00	7.00	1.40
Rim Vent (6-in, Diameter)/Weighted Hech. Actuation, Gask.	1	0.71	0.10	1.00
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask	1	0.95	0,14	1.00
Gange-float Wall (20-in. Diam.)/Whibolted Cover, Ungask.	i	2.30	5.90	1.00
Access Hatch (24-in. Diam.)/Bulted Cover, Gasketed	1	0.00	0,00	0.00

lotal tosses (lb):

4524.09

TABLE 4 Schedule of Sessenat and Geographical Volatility Classes*

This terminals, pulped to opposite between duringser and seler, denotes the volatility properties of the last are time and place of delivery its the end user. If also denotes the vector treasure for treasure for treasure of the selection described the selection described to the selection of the

Where startative cented are lated, siner case or information contract to broadcaster the opine start do exercised by the nature.

\$124 s	ian.	Fec.	Mer.	Apr.	May-4	June	بإخداد	Aug,	Sact. 1-:5	5ept_ 16-30	Ces.	New,	Cac.
Lacarta,	5-4	≎	C-4/C-3	. C-3/A-3	~4 (C-3)	4-30	، مثيد	¥-2#	عيد	تعدي	Ç-Z	CJC	
laura	I-4	2-5	E-5	5-3	£-6/0-4	444		- 4	C	C-4/6-5	€-5	E-5	£-5
TETTE .										* '			~~
N C4" Capitode	G-4	C-4	0-4C-3	C-3/A-2	A-2 (5-0)	And ?	ومبتر	آسة	2	2-21B-Z	8-2/0-2	C-270-4	2-4
and € !11*											, ., .,	,	•
Language									•				
Remainder of	Comp.	S-4/C-3	C328-4	3-2/4-2	14 (S-2)	A	Anto	عد (سیار	Aut #	A=÷	-1/8-2	5-2 /0-3	ಧವನ್ನು
State					- \			•					
Xertere	5-5/C-4	 -	04/03	Carres	A-2 (C-2)	تسد	1	تتسغ	2-2	2203	C-3/C-4	C-4	. چينسټ
Carrier		-			- (-	. –	•			-	
North Casat	E-5/0-4	C4	C-4	3	14 (C-17)	ەئسد	int &	ا الستر الستر	4024	1-2/8-Z	8-7/C-1	C-JIC-4	CH/E-
South Cases	3-4	C-4	تحبنت	C-J/A-3	A-JIC-J	-	#2سد	A-25	4-20	A-2/8-2	3-UC-3	C-3/0-4	G-4
Southers			C-2/8-2	3-2/A-2	2-2:5-3	dai e	بيسببر مراسد	م م	in in	,imit	M-1/8-2	3-2/2-3	ರವಣ-
intercer	5-4/C-4	مين مسن		C-4/A-3	14(64)		مير مير	4-28	م المسار	<u>جــــتر</u>	5-2:C-3	G-3/C→	· 3-4/E-
		E-5/2-4	G-4/C-3	- ı -		-	2-24	مريد		4-US-2	3-0C.3	C-3/2-4	
	<u> 5-3</u>	–		C-3/A-3	1 (C7)	imit#			الميارة الميارة		2.4 	0-41€- 3	G.⊷\E.
Donasticus:	£-5	5 -3	₫-3/C	نسمب	(۱۰۰۰) بستر		43	***		تتاتير	Circ	. ,	2-5
mewald.	2-4	€-5	#-3iC	خستربست	است) غسد	in S	يت	المام المام	A			G/E5	5-4
unci di Commod	£-3	#-5/C4	3 →	تحبب	7-3 (C-22	20	4 تسد	<u>م</u> ت	عيس.	تعاتب	<u>متت</u>	C/E-3	£-5
onda	<u>ټ</u>	<u>ئ</u>	تتست	CJU	₩ 4(C-3)		صيمه	≃تسد	ميت	~1C-2	Ç	ಧಿವರ್⊶	<u></u>
eorça.	; ÷	ن ست	C-4/C-3	Cathari		التيسير	<u>ت ت</u> سن	.h	4 ينسر	يت الت	Ç		-
rwani.	C-C	C-3	C-3	Ç-J	Ç.Ç	Ç-3	تت	C-3	CLI	C-C	C-3	ಧಾ	C
States,													
حصرت الله الا	≅-3	₹~3	2-5/C-4	ئىسىد بىلىنىڭ	(هبني) غييفر		يقسنتر	چستر ج	A		C-3/0	C-4/E-5	- -5
SAST CONTRACTOR TO	. 	- E-6/C-+	s Commission	، ڪمھيسن ۽	- ~ (C-3)	A-40	ra Aaren 🐃	mana.	-	-	. 8-2/C-I	·· • • • • • • • • • • • • • • • • • •	. Owele:
THE SHARE	:	· ·	S 12		•			•					
N 40* Lathace	£-3	5-3	#-##C4	C-46Ami	النست) عبيد	ئ ستر	ټښ	تش	***	تتارت	C-3/C-4	C-4E-3	5-3
S 40" LIBRICA	<u>=</u> -4	€-5	£-5/C	تساريس	A-3 (C-5)	تہ	ám.	تسد			C-C/C-4	*	-عبد
	E-5	E-3	5-5/C-4	Q-14/2-4	(سے) عسد	تسر	تستر	تسد	J-2	يت المراجد	COTO-	G-47E-5	5 -3
	£.5	1 .i	E-5/C→		اتت) تسد	-		تست	تست	4-1/C-3	C-3/C-4	J-4/E-5	#-5
urera	£-3	E-3/C-+	Q-4/C-3	C-72A-1	A4 (C-3)	A	ه څخه	200	مان مان سار	2-2/8-2	3-2/C-3	C-3/0-4	C-M/E
PRESCRIP	±-á	5-5/0-4	Orricant Carried	Cuitani	71(00)				A=3	يترح	C-T/D-4	C-4/E-3	E-3
	5-a	Cart.	G-4/C-2	CILLI		<u> </u>	حت.	**	الارت. الارتياز	المالية المالية	63	C-10-4	2-4
	9	±.5	5-6/0-4	المسترك	السناء عسد		- بيسد قسن	تَحَدُ		A-2/0-4	-	تــنو-a	-
20/5 4				- •					متنه	تحات	C-2/C-4	<u>0.4</u> ,6.5	¥-5
ACTYCIANG	ī-i	£-á	E-5/C-	مسكريسن	إسال السار					نستانت. نستانت.	C	0/Æ-5	E-1
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ichque	2-4	E-£	E-3/C-+	ئستربست	A-4 (C-4)	تب	يتست	يسبر	تسد	4-3/0-4	Ç-4	C-/E-	<u>-</u> -1
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(amanco i	≎	<u> </u>	ひしょうしょう	CIIALI	ىنى، ئىتى) ئىسد	تتسنر	تسن	<i>></i> Z	2-2	ナビC ゴ	C-3	の会員上	С-4
100000	≛ -3	5-3/\$-4	<u> </u>	Cul/And	## (C-2)		الايست	≥ يتسد	***	ルセ ご	G-3/0-÷	· 🖰	-3.4€
CRIZERI .	. z -5	5 -3	<i>2</i> -3/C-4	يسدبسن	~ 100	2-2	تست	يجسد	A+4	<i>~和</i> ここ	C	ق ﷺ ع	€-5
MOTREME.	≝√ĭ	- -3	草・交んご一・	تسعيس	7-31C-G	<u>ب</u> ــــــــــــــــــــــــــــــــــــ	4-4	A-Z	يهستر	2/8-Z	3-2/0.3	C-5/12-4	/E-3
racii:													
N CS" Latritude	E- -5	E-5/0-4	⇔	C-4/A-Z	A-3 (C-3)	200	≥س2€	A-24	A	ACE-I	3-2/C-3	⊂ವ/ರ∸	C-4/E-3
S 33" Campaia	O-4	وعسوع	C-2:8-2	3-2/2-2	A-2 (5-2)	.i	246	<u>ا</u> سلا	Aur. E	أحذ	A+1/8-2	3-2/C-3	C-2/C-
re ristrative	£-£	5 .3	E-3/C-4	Catesant	A (C)	4-3	تحد	3-3	2	A-7/0-4	<u></u>	C-46-3	£-5
lw Jersey	5-5	5-3	E-3/C-4	ئىدىن	بستن) مسد (نستان) مسد	===	~;	=	=======================================	A-3/0-	<u>0</u> →	D-18-3	Ī.\$
Per Military		= 4		A	·;	~	\sim	~	~	~~~		المرتبي أحسنا	
NGA" Latitude	5-3/O-4	سن	3-4/C-2	A. 274 . *	L-9 /45*	4 1		<u>ئ</u> ىسىر	17	A-2/9-2	3-2/C-3	0.3/0.4	g. - ∔
			_ ,	CJIAZ	7-2 (4-1)) مسائر د	Aut	-	A-4				
S C4" Latinuca	<u></u>	3-4C-3	C-3/8-2	3-2/2-2	A-2 (6-2)	۽ سدر ند	فستر	ا س	ا د د	A-1/8-2	3-2/C-3	CUSTO-4	9 .
YOUR	E-4	2-3	£-3/C→	Q-4/A-4	A (C)	تس <i>ن</i>		بسد	يت	A+3/Q-+	c →		E-5
POT CHOMOS	5-5/0	<u>-</u>	C-4	وسدبنس	~1 (C-3)		ميس	₩	الله الله	~ಬಿ⊂್	€	****	C-4E-3
TT Carcon	E -3	£-3	£-3/C-+	G-4/A	إسسيء بنسد		A-2	A-2	جسد	**2/C-3	Ç:3/C.→	C-TIE 3	≝ -á
96	£-5	€ -3	Z-5/D-+	بسعرياسي	Aud (Cud		تسد	in.	A-3	₩ 70-3	C-ವ;C	Completed	2 -5
danoma	₹-5/ © -	3 ⊶	0-4¢-3	CSIA-S	ALC (C-C)	**	.u. i	ئىس <i>ى</i>	عست	<i>1</i> .24.2	ゅんてい	c-sic-+	Ç'/≅-3
#ÇOT													
E 122" Lorquide		E-4/C-	ئست	. خسادرنسن	بست) غسار	٠ تسد	ية سفر	A-Z	***	4-2/C-3	C-3/C-	<u></u>	C-ri€-
W TEET Language	£-3	≛-3/C-∔	C-4	عسقياس	(ت−2) مسلا	A-2#	ع تسن	A-14	25سنر	A-JIC-G	C-1,C-4	C-/E-S	£-5
HELENOVERSEE	I-3	₹- -5	£-5/0-4	C	الله (C) عسام		تبد	تتست	تسر	ن-70سد	C	C-4E-5	£-5
SCHOOL STREET	E-3	5-3	5-5/D-+	Cont/Auna	است) نسد		تحد	نَّـــَةً تَــــةً	<u>ئ</u> سد	i-3/0-4	0-4	Ç-4/€-5	£. {
MATE CATOURNE	Ç4	0-4	Ç	CHIAL.	A-3 (C-3)		تمد	4-2	بند	4-2/C-3	C-3/C-4	C-4	
uet Carera	1.5	8 -5	سے تاریخ	Continue	11(03)		4-6	2	A-2		3-2/C-3	C-3/C-4	3-/8-3
	5-6/Q-4	<u></u>	<u>~~~</u>	3-44-3	ارت ارت		مان حازستر	- 2×	2-24	2.000	C-3/C-4	3-4	C/E-4
			-		إمنترا من		,4 "		,4."				~~
£ 99" Language	Ç4	ست	0-40-3	CANA	44 (C-3)	3_7#	لله يُح مار	A-24	€ يستر	L.719.7	5-2/C-3	೦ತ್ಯರ⊶	O4
W 99" Language							م م	A-4-	-	<i>→-2/E-2</i>			
man conditions		2-4C-3	C-3/8-2	3-2/A-2	A-2 (株元)				المارية المارية	A-1/2-2	5-2C3	C-T/C-4	
~~ *	€-4	\$~\$/ * 0~~	Ç-mŁ	C-4/A-3	(تست) تسد	, a	200	کی تید	مجتهد	人-2/5・ る	3-2/C-3	C-3/C-4	□- /E-4
without	∄- 5	€ -3	≝-3/C-4	للسلاليات	Ame (Cont)		تسد	4-1	A-3	→ 3/5-÷	- L	C-4/E-5	4.1

1995 AMERICAN SIZIETY FOR TESTING AND MATERIALS:

ASTM D 4814-950 Standispec For Auto-the Gordine

SEASULL YOUATILITY CLASSES.

IDAHO (South 46° Latitude).

A TERE: (psi) A F.O pe. はすと TUL 10,0 E/D 15713.57% 9,0 -2 -A F=3 KUG SEP. 1-15 : A 9.0 . 11.5 MAR 13.5 13.5/9.0" SEP 16-30 A/3 13.5 9.0/0 A-92 15.0 10/11.5 3/0 MAY A α 9.0 . NOU YD JUN A 11.5/13.5 ŒC D/E 13,57 KTS

BEST CHIS ALLOWARD AMERICA WLATILITY:

[(1 monder)(15.0 psi) + (2 monders)(13.5 psi) + (1 monders)(11.5 psi)+]"
+ (1 monder)(10.0 psi) + (6 monders)(9.0 psi).

RYP = 10.9 psi

WORST CASE ALLOWABLE ANNUAL AVERAGE YOLATILITY:

[(3 mm/s)(15.0ps;) + (3 ms)(13.5ps;)+ (1 ms)(11.5ps)+(0.5ms)(10.0ps;) +(5.5po)(9.0ps;).] /12 months

KVP NORT = /2.6 751

Note: This information for may it to September 15 of each calendar year is the came requirement as required by 40 CFR 80.27.

HOCFR 80.27 is an applicable standard for get Ditribute. Terminals. From May 1 to Sopt. 15.

ATTACEMENT D

RVP 11, ASTM D4814-95a Variable RVP, RVP 13 Spreadsheets and TANKS2 Documentation Titte V Engineer:

Company Name:

Sinclair Oil Corp.

Location:

Boise Idaho

DM

Date Greated; Today's Date: January 4, 1996 01/25/96

Calculation of Loading Rack Emissions

THIS SPREADSHEET IS DESIGNED TO ESTIMATE EMISSIONS BY MONTH

ENFORCEABLE STANDARD (ASTM D 4814-95a) FOR GASOLINE RVP variance with month

ASSUMPTIONS

- 1. TANKS2 0 provides the monthly average true vapor pressure of the gasoline product ANO the molar fraction of HAP constituents in the vapor phase of the gasoline product.
- 2. Gasoline RVP varies as allowed by ASTM D4814-95a Specificiations. (IAP constituents remain the same throughout. They only vary with differing ambient conditions, as predicted by the TANKS2.0 program for HAPs present in the vapor phase.

Reference:

AP-42, Sect. 5.2

only laming is changed below

TOTAL-HAPS ONLY

JANUARY

JANUARY

JANUARY

1. = 12.46 SPM/T

where ta = loading loss, lb/tiXX) gat

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psta-

M = molecular weight of vapor, varies lb/lb mole

T = absolute temperature, R

S = 45676 P = 45676 M = 61.000 T = 611.1

19438.3 E^3 gallons

JAMIARY Gasoline Throughput, gallons per month, =

JANUARY

HAPs	Vapor Mass	l.i.	Emissions
Compounds	fractionl	12/12 1 gall	(Ten/menth)
Benzene	0 (x)32	0.0218	0.21
Ethylbenzene	0 0003	0.0020	0.02
Haxane	0,0053	0.0362	0.35
Naphthalene	0.0000	4.07E-06	3.95E-05
Tohune	0 0063	0.0430	0.42
Trimethylpentane (2,2,4)	0 0009	0.0061	0.06
Xylene-in	0 0008	0.0055	0.05
Xylene-o	0,0003	0.0020	0.02
Xylene-p	Ø (XX)6	0.0041	0.04
Gasolino (RVP-15)	0.9642	6.7451	65.26

FEORUARY	FE	BRUARY	FEI	RUARY
Li # 12.46 SPM/E	Where Li = loadh	ng loss, lb/10X	O gal	Lugar Wassarsee Chart
	S = salur	illon factor, di	nensioniess, 1.0	5 v 600
		apar pressuru		P # 4.3253
			vaриг, 66.5 (b/lb-n	nole M # 61.859
	T = absok	de lemperatu	e, 508°R	T更清洁和最高11.1
Annual Gasoline Through FEBRUARY	рий, gallons per ye	ear, =		19438.3 E^3 gallons
IIAPs	Mole	£ı.	Emissions	
Compounds	fraction	[M10 1 040		
Benzene	().(X)38	0.0246	0.24	
Ethylbenzene	0.0003	0.0020	0.02	
Hexane	0.0061	0.0398	0.39	
Naphihalene	0.0000	3.89E-06	3,78E-05	
Tokiene	0.0052	0.0339	0.33	
Trimethylpenlane (2,2,4)	0.0012	0.0078	0.08	
Xylene ni	0.0009	0.0059	0.06	
Xylene o	0 0004	0.0026	0.03	
Xylene-p	0.0007	0 0046	0.04	
Gasoline (RVP-13.5)	0.9814	6.4012	62.21	
TOTAL			63,39	
TOTAL-HAPS ONLY		į.	1.18	
MARCH	MARCH		R.	MARCII
L. = 12.46 SPM/F	where L. = loads	a loss Ib/100		Jagografian Chair
, ,, ,			nensionless, 1.0	S = acc
		apor pressure		P = 4.5069
			vapor, 66.5 lb/lb-n	
		ya farihataki		T #
Annual Gasoline Through MARCH	put, gallons per ye	iaf, =		19430.3 E^3 gallons
HAPs	Mole	I t.	Endsslons	
Compounds	fraction (11410 : 1141		
Benzena	0.0039	70 0270	0 26	
Ethylluchzene	0.0004	0.0028	0.03	
i lexane	0.0062	0.0429	0.42	
Marshibatona	A 0000	4 196 66	30.004	

HAPs	Mole	I i.	Endssions
Compounds	fraction	AFA : 55 F	(Perlmenth)
Benzene	0.0039	70 0270	0 20
Ethylbenzene	0.0004	0.0028	0.03
l lexane	0.0062	0.0429	0.42
Haphiladena	0.0000	4.12E 06	4 01E-05
Tokuena	0.0054	0.0374	0.36
Trimethylpontano (2,2,4)	0.0013	0.0090	0.09
Xylene-m	0.0009	0.0062	0.06
Xylune-o	0.0004	0.0028	0.03
Xylana-ը	0.0007	0.0048	0.05
Gasolina (RVP-13.5)	0 9806	6.7857	65.95
TOTAL.	······································		67.24
TOTAL-HAPS ONLY			1.29

API	3 1L
Lı. =	12.46 \$PM/f

APRIL.

APRIL

where t. = loading loss, It/1000 gat

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, 4.0 psia

M = molecular weight of vapor, 66.5 lb/lb-mole

T = absolute temperature, 508°R

林 夏	see Charl
S v geg	
	3,1001
M # D	34807.U44

Annual Gasoline Throughput, gallons per year, =

	Ω	£	٦	ŧ	1
n	1-	3	٦	ŧ	1

HAPs	Mole	Lı	Emissions
Compounds	Fraction	MW10 : gall_	(Ferdmenth)
Benzene	0.0063	0.0319	031
Ethythenzene	0.0006	0.0030	0.03
Hexano	0.0100	0.0507	0.49
Naphihalena	0.0000	3.02E-06	2.94E-05
Tokiena	0.0089	0.0451	0.44
Trimeihylpentane (2,2,4)	0 0023	0.0117	0.11
Xylune-in	0.0016	0.0081	0.08
Xylene-o	0.0007	0.0035	0.03
Xylana-p	0.0012	0 0061	0.06
Gasoline (RVP-9)	0.9684	4.9070	47.69
TOTAL.	" '******"*********** ' '		49.25
TOTAL-HAPS ONLY		•	1.56

MAY

MAY

MAY

196

Li. = 12.46 SPM/T

where i.e = loading loss, lb/1000 gal

6 = saturation factor, dimensionless, 1.0

P = true vapor pressure, psia

M = molecular weight of vapor, IbAb-mole

T = absolute temperature, 'R

Annual Gasoline Throughput, gallons per year, =

MAY

HAPs	Mole	Į,	Emissions
Compounds	fraction	.(Med r 91)	(Ten/menth)
Benzene	0.0065	0.0361	0.35
Ethylivenzene	0.0007	0.0039	0.04
Hexane	0.0103	0.0573	0.66
Napluhalene	0.0000	3.31E-06	3,22E-05
Tohuna	0.0094	0.0523	051
Trimethylpentane (2,2,4)	0.0025	0.0139	0.14
Xylene m	0.0017	0.0095	0.09
Xylune o	0.0007	0.0039	0.04
Xylene p	0.0013	0.0072	0.07
Gasoline (RVP-9)	0.9670	5.3778	52.27
TOTAL.			54 06
TOTAL-HAPS ONLY		•	33.23.21.79

19438.3 E^3 pallons

JUNE	JUNE		JUNE			
Li = 12.46 SPM/T	where L. = loadir	ng loss, liv/IAXX		l. ≅ sea Chait		
			rensionless, 1.0	S v seu		
	P = true v	apor pressure,	4.0 psla	P # 3,6857		
	M ≈ male	adar weight of	vapor, 66.5 lb/lb mola	M # 67,101		
	T = absolu	no pemberatra	, 508°R	T# 511,1		
Annual Gasoline Through	ipul, gallons per yı	iaf, =		19438.3 E^3 gallons		
IIAPs	Mole	11.	Emissions			
Compounds	fracijen i	1_ ((49 : 91) _1	Tendinentij) 030			
Ethylbenzene	0.0007	0.0042	0.04			
Hexane	0.0105	0.0633	0 62			
Naphihalena	0.0000	3.59E-06	3.49E-05			
Toluene	0.0098	0.0591	0.57			
Trimethylpentane (2,2,4)	0.0027	0.0163	0.18			
Xylene-m	8100 0	0.0109	0.11			
Xylene-o	0.0008	0 0048	0.05			
Xylene-p	0.0013	0.0078	0.08			
Gasoline (RVP-9)	0.9657	5.8222	56.59			
TOTAL. TOTAL-HAPS ONLY		\$1 	58.60 2.01			
JULY	JULY		JULY			
1. # 12.46 SPM/T	where L. = loads	na loss Huttax		Leg - See Charl		
			unsionless, I.O	Syses 1		
		apor pressine,		P = 3 9976		
			vapor, IbAb-molu	M = 67.126		
	T + absolu	yn fembetalme	, R	T= 511,1		
Annual Gasoline Through	ipid, gollons per ye)A(, **		19438.3 E^3 gallons		
IIAPs	Mole	1.4.	Emissions			
Controunds	Frasileni	11410.19a)]_(Tankmenth)			
Benzene	0.0069	0.0451	0.44			

0.0069 0 0451 0 0046 Ethylbenzene 0.04 laxana 0.0108 0.0706 0.69 0.0000 0.0102 Haplillinlene 3.90E-06 3.79E-05 Tolerena 0.0667 0 65 0 18 Frimethylpentano (2,2,4) Xylana-m 0.0029 0.0190 0.0019 0 0124 0 0052 0.12 Xylene-o 0.0008 0.05 Xylene-p 0.0014 0.0092 0.09 Gasoline (RVP-9) 0.9644 6.3087 61.32 TOTAL TOTAL-HAPS ONLY

AUGUST Li. = 12.46 SPM/T

AUGUST

AUGUST

where Lr = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psia

M = molecular weight of vapor, lib/to-mole

T = absolute temperature, "R

Sesee 3.8657 Pg 3.8657 Ma 67.116 Ta 611.1

19438,3 E^3 gallons

19438.3 E^3 gallons

Gasoline Throughput, gallons per month =

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4		-	***	-	÷.
ł					

IIAPs	Mole	1.4	Emissions
Compounds	_fraction	[[M19] pail_[Teninenthi
Benzene	0 0x)68	0.0430	0.42
Ethylbenzene	0.0007	0 0044	0.04
lexane	0.0107	0.0677	0.66
Naphihalene	0 0000	3.77E-06	3,66E-05
Tokuna	0.0101	0.0639	0.62
Trimethylpentane (2,2,4)	0.0028	0 0177	0.17
Xylene-m	0.0018	00114	0.11
Xylene-a	0.0008	0.0051	0.05
Xylene-p	0.0014	0.0089	0.09
Gasoline (RVP-9)	0.9650	6.1035	69,32
**************************************	*** /*****		

TOTAL. TOTAL.-HAPS ONLY

2.16

SEPTEMBER

SEPTEMBER

SEPTEMBER

L = 12.46 SPM/T

where the toading loss, b/1000 gat

S = saturation factor, dimensionless, 1.0 P = true vapor pressure, psia

M = molecular weight of vapor, lb/lb mote

A' ,endaraquist temperature, 'R

I. 9 see Chart S = see 1 P = 3.5289 M = 67.088 T = 511,1

Gasolino Throughput, gullons per month #

SEPTEMBER

HAPs	Mole	l.a.	Emissions
Compounds	Fracilon		(dlagadagT),
Benzen a	() ()()66	0.0381	0.37
Ethylbenzena	0.0003	0 0040	0.04
Liexane	0 0104	0.0600	0.68
Naphthalene	0.0000	3.44E-06	3,34E-05
l'okiena	0.0096	0.0554	0.54
Trimethylpeniane (2,2,4)	0.0026	0.0150	0.16
Xylene-m	0.0017	0.0098	0.10
Xylene-o	0.0007	0.0040	0.04
Xylena-p	0 0013	0.0075	0.07
Gasoline (RVP-9)	0.9664	5.5775	54.21

TOTAL TOTAL--HAPS ONLY

56.09

4 394

ASTM

OCTOBER	OCTOBER OCTO	RFR	
L. = 12.46 SPM/T	Whate L. = loading loss, \$1/1(XX) nat	1. + See Chait	
	S = saturatkur factor, dimensionlu	55, 1.0 S 7 600 33 1 1	
	P = titlu vapat presstav, psia	P v 3,5276	
	M = molecular weight of vapor, th	All-mole M + 66.490	
	T = absolute temperature, "R	T + 511.1	
Gasolina Throughpul	, gakons per month =	19436.3 E*3 patton	s
CARL ST CARLOTTERS	•		-

OC	ì.	ťΝ	i	F	K

HAPs	Mole	Ł.	Emissions
Compounds	Fraction	Hb/10 : 0 an .	(Youknenth)
Benzeno	0.0056	0.0326	03)
Ethythenzena	0.0005	0.0029	0.03
Hexane	0.0090	0.0515	0.50
t laphthalene	U (XXXX)	3 416 06	3,31E-05
Tohiene	0.0080	0.0457	Ω.44
Frimethylpentane (2,2,4)	0.0021	0.0120	0.12
Xylene-m	0.0014	0.0080	0.08
Xylene-e	0.0006	0.0034	0.03
Xylene-p	0.0011	0.0063	0.06
Gasoline (RVP-10)	0.9717	6,5567	54.01

TOTAL TOTAL-HAPS ONLY

NOAEWREK	NOVEMBER	NOVEMBER
Li = 12.46 SPM/T	where l.r. = loading los	s, Ib/1000 gal
	S = saturation (actor, dimensionless, 1.0
	P = true vapor r	xessino, psla
	M ≠ molucular v	veight of vapor, lib/th-mote
	T = absokile lei	uperature, "R

Gasoline Throughput, gallons per month = NOVEMBER

HAPs	Mole	1.	Emissions
Compounds	Fracilen	(lb/19 ± gal)_	(Tenknenth).
Benzene	0.0046	0.0265	0.26
Ethylbenzene	0.0004	0.0023	0.02
i lexana	0.0074	0.0427	0.41
Maphilisalena	0.0000	3.44E-06	3.34E-05
Tokiene	0.0064	0.0369	0.36
Trknethylpentane (2,2,4)	0.0016	0.0066	0.08
Xylene m	0.0011	0.0063	0.06
Xylene o	0.0005	0.0029	0.03
Xylene-p	0.0008	0 0046	0.04
Gasoline (RVP-11.5)	0.9774	5.6354	54.77
TOTAL.	······································		56 04
TOTAL-HAPS ONLY		į,	1.27

Lu #	see Chail
Sesee	3. 1
P#	3 6717
ΜĄ	64.416
T =	S (110) [511.1
1.41	1.3.4.3.4.3.6.3.6.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1
A	19139 7 FA3 asto

DECEMBER

DECEMBER

DECEMBER

LL = 12.46 SPM/T

where Lr. = loading loss, 10/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, 4.0 psia

M = molecular weight of vapor, 66.5 lb/lb-mole

T = absolute temperature, 508°R

1. g see Charl 3 g see 1 1 4.123 4 9 61,847

19438.3 E^3 gallons

Annual Gasoline Throughput, gallons per year, =

DECEMBER

IIAPs	Mole	14	Emissions
Compounds	fracilign	_(Meg : 91/41)_	(Ten/menth)
Benzene	0.0037	0.0230	0.22
Ethylbenzene	0.0003	0.0019	0.02
i lexane	0.0060	0.0373	0.36
Naphthalene	0,0000	3.70E-06	3.60£-05
Tokiene	0.0051	0.0317	0.31
Trimethylpentano (2,2,4)	0.0014	0.0068	0.07
Xylene-m	0.0009	0 0056	0.05
Xylane-o	0.0004	0.0025	0.02
Xylene⊦ρ	0.0006	0 0037	0.04
Gasolina (RVP-13.5)	0.9820	6,1043	59,33
TOTAL			80.42

TOTAL-HAPS ONLY

1.09

ANNUAL LOADING RACK EMISSIONS (RVP 10 with Single IIAPs)

VOC Aggreg IIAP Single IIAP Single IIAP

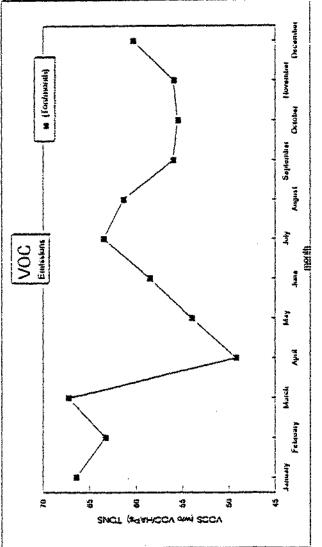
Emissions Emissions lexane Emis Toluene

(Tonlyr) (Tonlyr) (Tonlyr) (Tonlyr)

712,17 19,24 6,02 4,50

	VOC	Aggregato	lexane
	Emissions	IAPs	Emisskons
	(Ton/month)	(Torvmonth)	(Tor/month)
lanuary	66.44	1.17	. 0.35
February	63,39	1.18	0.39
March	67.24	1.29	0.42
Apri l	49.25	1.56	0.49
May	54.06	1.79	0.56
huie	58,60	201	0.62
July	63.58	2.26	0 69
August	61.48	2.16	0 66
September	56 09	1.88	0.58
Oclober	55,58	1.57	0.50
November	56 04	1.27	0.41
December	60.42	1.09	0.36

(Terdinash)



Octubre

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T.O.L

TANKS PROGRAM 2,0 EMISSIONS REPORT - DETAIL FORMAT TANK IDENTIFICATION AND PHYSICAL CHARACTERISTICS

identification 401 season Identification No.: Citys Boise State: ID Company: Sinciair Oll Typu of Fank: External floating Roof Yank Dimensions 60 Dimmeter (ft): 839400 Volume(gailons): 49 furnovers: Paint Cheracteristics Shell Condition: Light Rust Shell Color/Shade: White/White Shell Paint Condition: Good Roof Characteristics Double Deck Roof Type: Fitting Category: Typical Tank Construction and Rim-Seal System Vel ded Construction: Hechanical Shoe Primary Seal: Secondary Seal: Shoe-mainted

Roof fitting/Status	Quantity
Vacuum Breaker (10-in, Diam, Wall)/Weighted Hech, Actuation, Gask.	1
Unstacted Guide-Pole Well/Ungasketed Silding Cover	1
Roof teg (3-in, Diameter)/Adjustable, Double-Deck Roofs	10
Moof Drain (3-in, Diameter)/Open	1
Rim Vent (6-in. Diameter)/Weighted Hech. Actuation, Gask.	1
Gauge-Hatch/Sample Well (8-In. Diam.)/Weighted Hech. Actuation, Gask	1
Gauge-Float Well (20-in, Dlam.)/Unboited Cover, Ungask.	1
Access Natch (24-in, Dism.)/Holted Cover, Gasketed	1

Meteorological Data Used in Emission Calculations: Boise, Idaho

3000

INQUID CONTENTS OF STORAGE TANK LIQUID CONTENTS OF STORAGE TANK

Hixture/Component	Honth.			Surf. (deg F) Hax.	ifquid Bulk Temp, (dog f)		ressures Hin.	(psia) Hux.		Liquid Hoss Fract.	Hass	Hol. Valght	Basis for Vapor Pressure Calculations
Gasolina KVP 9-Sinciair HAPa	APR	52.46	45.90	59.03	51,12	3, 1001	N/A	H/A	67.049				
Buttelia						0.9440	H/A	H/A	_,,	0.0188	0.0063	70.11	Option 2: A=6.9050, B=1211.033, C=220.790
Ethylbenzene						0.0831	H/A	H/A		0.0207	0.0006	106.17	Option 2: A=6.9750, B=1424.255, C=213.210
Hexuno (-n)						1.5673	H/A	H/A		0.0181	0.0100	86.17	Option 2: A=6.8760, 8=1171.170, C=224.410
i sooci wite						0.4345	N/A	N/A		0.0151	0.0023	114.22	! Option 1
Haijhthatene C-10, II-8						0,0017	N/A	H/A		0.0013	0,0000	128.16	Option 2: A=7.1463, B=1831.571, C=211.821
Toluene						0.2600	H/A	N/A		0.0972	0.0089	92.13	Option 2: A=6.9540, B=1344.800, C=219.480
Xylene (-m)						0.0995	M/W	N/A		0.0448	0,0016	106.17	Option 2: A=7.0090, B=1426.266, C=215.110
Xylana (*a)						0.0539	N/A	H/A		0.0349	0.0007	106.17	Option 2: A=6.9980, B=1474.679, C=213.690
Xytene (-p) "Paraxytene" Gasotine (RVP 9)						0.0746	¥/A	N/A		0.0448	0.0012	106.16	Option 2: A=7.0206, B=1474.403, C=217.773
4420(()14 (84) 7)						3.8088	H/A	H/A		0.7043	0.9084	06.50	Option 4: RVP=9.00, ASIH Stope=2.5
Gasoline RVP 9-Sinciair HAPs	YAH	56.94	49,41	64.47	51.12	3,4010	H/A	N/A	67.077				·
Builtene						1.0722	H/A	H/A		0.0188	0.0065	78.11	Option 2: A=6.9050, B=1211.033, C=220.790
Ethylbenzene						0.0975	H/A	H/A		0.0207	0.0007	106.17	Option 2: A=6.9750, B=1424.255, C=213.210
Nexase (-n)						1.7660	N/A	N/A		0.0181	0.0103	86.17	Option 2: A=6.8760, B=1171.170, C=224.410
isocciana Unchinalana C-18, U-9						0,5209	N/A	H/A		0.0151	0.0025	114.22	Option 1
Hojáthalana C-10, H-8 Tolueno						0.0021	R/A	H/A		0.0015	0,0000	128,14	Option 2: A=7.1463, B=1831.571, C=211.821
Xylene (-m)						0.2999	H/A	H/A		0.09/2	0.0094	92.13	Option 2: A=6.9540, B=1344.800, C=219.480
Xylene (-o)						0.0636	H/A H/A	A/K		0.0540	1100.0	100.14	Option 2: A=7.0096, B=1426.266, C=215.110
Xylene (-p) "Paraxylene"						0.0874	H/A	N/A		0.0357	0.0001 1108 A	100.11	Option 2: A=6.9980, B=1474.679, C=213.690
Gesotine (RVP 9)						4.2618	N/A	H/A		0.7043	0.9670	66.50	Option 2: A=7.0206, B=1474.403, C=217.773 Option 4: BVP=9.00, ASIM Stope=2.5
Gasoline RVP 9-Sincipir HAPs	JUH	28.03	52.92	68,86	51 12	3.6857	N/A	11/4	67.101				
\$anzene					# 1. th	1.1969	H/A	H/A	W\$. \$U\$	A ALAA	8 0067	78 11	Option 2: A=6.9050, B=1211.033, C=220.790
Ethyllienzene						0.1119	N/A	N/A		0.0100	8.0001	104 17	Option 2: A=6.9750, B=1424.255, C=213.210
llexane (-n)						1,9580	H/A	H/A		Ω Ω181	0.0105	RA 17	Option 2: A=6.8760, B=1171.170, C=224.410
Leoctane						8008.0	H/A	H/A		0.0151	0.0027	114 22	Option 1
Hapirthateno C-10, H-8						0.0025	H/A	N/A		0.0011	0.0000	128.16	Option 2: A=7.1463, B=1831.571, C=211.821
Tutuene						0.3394	H/A	H/A		0.0972	0.009A	92.13	Option 2: A=6.9540, B=1344.800, C=219.480
Xylene (-m)						0.1334	H/A	H/A			0.0018	106.17	Option 2: A=7.0090, B=1426.266, C=215.110
Xylene (-o)						0.0734	H/A	HZA		0.0349	8000.0	106.17	Option 2: A=6.9980, B=1474.679, C=213.690
Xytene (-p) "Paraxytene"						0, 1003	N/A	N/A		0.0448	0.0013	106.16	Option 2: A=7.0206, B=1474.403, C=217.773
Gusotine (RVP 9)						4.6142	N/A	H/A		0.7043	0.9657	66.50	Option 4: RVP=9.00, ASIN Stope=2.5
Gasotine RVP 9-Sinclair HAPs	HH.	64.94	56.05	73.82	51.12	3.9976	N/A	H/A	67.126				
Bunzena					•	1.3371	N/A	H/A		0.0188	0.0069	78.11	Option 2: A=6.9050, B=1211.033, C=220,790
Ethylbenzene						0.1286	H/A	H/A		0.0207	0.0007	104.17	Option 2: A=6.9750, B=1424.255, C=213.210
Haxana (-11)						2.1725	H/A	H/A		0.0181	0.0108	86.17	Option 2: A=6.8760, B=1171,170, C=224,410
inoortuna						0.6945	N/A	H/A		0.0151	0.0029	114.22	Option 1

TANKS PROGRAM 2.0 EMISSIONS REPORT - DETAIL FORMAT CONT.

Hixture/Component	Month			Surf. (deg f) Hax.	Liquid Buik Temp. (deg f)		Pressines Hin.	(psia) Hax.	Vapor Mol. Veight	Liquid Hase fract.	Mars	Mol. Basis for Vapor Pressure Weight Calculations
Naphthalana C-10, H-8 Toluana Xylana (-m) Xylana (-o)						0.0030 0.3843 0.1530 0.0847	H/A H/A	H/A H/A H/A H/A		0.0972	0.0000 0.0102 0.0019 0.0008	92.13 Option 2: A=6.9540, B=1344.800, C=219.480 106.17 Option 2: A=7.0090, B=1426.266, C=215.110
Xytene (-p) "Paraxytene" Gasoline (RVP 9)						0,1152 4,9999	H/A H/A	H/A		0.0448		106.16 Option 2: A=7.0206, B=1474.403, C=217.773
Gasoline RVP 9-Sinciair HAPs Benzene Ethylbenzene Hexane (-n) Isooctane Maphthatene C-10, H-8 Toluene Xylene (-m) Xylene (-o) Xylene (-p) "Paraxylene"	AUG	63.26	35.14	71.38	51.12	3.8657 1.2774 0.1215 2.0813 0.6555 0.0028 0.3651 0.1446 0.0798 0.1068	N/A N/A N/A N/A N/A N/A N/A	A\H H\A\H A\A H\A\H H\A\H H\A\H		0.0207 0.0181 0.0151 0.0013 0.0972 0.0448 0.0349	0.0000 0.0101 0.0018 0.0008	106.17 Option 2: A=6.9750, B=1424.255, C=213.210 86.17 Option 2: A=6.8760, B=1171.170, C=224.410 114.22 Option 1 128.16 Option 2: A=7.1463, B=1831.571, C=211.821
Gasoline (RVP 9) Gasoline RVP 9-Sinctair HAPs Benzene Ethylbenzene Hexana (-n) Isoociane Naphihatene C-10, H-8 Yoluene Xylene (-m) Xylene (-o) Xylene (-p) "Paraxylene" Gasoline (KVP 9)	SEP	58,75	51,48	20.26	51.12	4.8368 3.5289 1.1278 0.1039 1.8518 0.5558 0.0023 0.3175 0.1240 0.0679 0.0931 4.6202	H/A H/A H/A H/A H/A H/A H/A H/A	N/A	67.088	0.0188 0.0207 0.0181 0.0151 0.0013 0.0972 0.0448 0.0349	0.0066 0.0007 0.0104 0.0026 0.0000 0.0096 0.0017	78.11 Option 2: A=6.9050, B=1211.033, C=220.790 106.17 Option 2: A=6.9750, B=1424.255, C=213.210 86.17 Option 2: A=6.9750, B=1424.255, C=213.210 86.17 Option 2: A=6.8760, B=1171.170, C=224.410 114.22 Option 1 128.16 Option 2: A=7.1463, B=1831.571, C=211.821 92.13 Option 2: A=6.9540, B=1834.571, C=211.821 92.13 Option 2: A=6.9540, B=1424.800, C=219.480 106.17 Option 2: A=7.0090, B=1426.266, C=215.110 106.17 Option 2: A=6.9980, B=1474.679, C=213.690 106.16 Option 2: A=7.0206, B=1474.401, C=217.775

DETAIL CALCULATIONS (AP-12) TANKS GRAN 2.0

Honth:	Yannaty	february	Harch	April	Hay	June	y hat	August	September	October	nedasver.
Rim Seat tosses (Ib):	-		-	251.3935	262.6579	270.0463	273.3399	255,2967	229.6753	-	*
Seal factor (th-mole/ft yr (mph)"n);	-	-	-	0.8000	0.8000	0,8000	0.8000	0.8000	0.8000	-	-
Average Wiskl Speed (mph);	•	-	•	10.0	9.5	9.0	8.4	8.2	8.2	-	-
Seal-related Wind Speed Exponent:	-	+	-	1.20	1,20	1.20	1.20	1.20	1.20	-	+
Value of Vapor Pressure function: Vapor Pressure at Daily Average Lightd	-	•	•	0.0591	0.0657	0.0720	0.0792	1270.0	0.0685	34 -	-
Surface Temperature (psia):	-	-	-	3.100072	3.401005	3.685667	3.997641	3.865687	3.528944	•	•
Yank Dimmeter (ft):	+	-	•	66	60	03	60	60	99	-	-
Vapor Holecular Weight (lb/lb-mole):	•	-	-	67.048695	67.076676	67.100921	67,126471	67.115976	67.087662	**	-
Product factor:	•	•	•	1,0000	1,0000	1.0000	1.0000	1.0000	1.0000	•	•
Ulthdrawal tosses (Ib):	-	-	-	16.2423	16.2423	16.2423	16.2423	16.2423	16.2423	-	-
Net Throughput (gal/month):	-	•	•	4854530	4854530	4854530	4854530	4854530	4854530	-	•
Shell Clingage Factor (bid/1000 sqft):	-	-	•	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	•	•
Average Organic Liquid Density (tb/gal):	•	•	•	0.0000	0000, 0	0.000	0.000	0,000	0.0000	•	•
Tank Diumeter (ft):	-	•	-	60	60	60	60	66	40	*	*
Ruof Fitting Losses (1b):	-	-	-	295,1420	310.6704	321.9596	329.2626	308,6501	277.6742		•
Value of Vapor Pressure function:	•	•		0.0591	0.0657	0,0720	0.0792	0.0761	0.0685	•	•
Vapor Holecular Weight (ib/ib-mole):	-	•	•	67,048695	67.076676	67,100921	67.126471	67.115976	67.087662	•	-
Product fuctor:	H-	•	44	1,0000	1.0000	1,0000	1.0000	1,0000	1.0000	-	-
Tor. Roof fitting loss fact.(lb-mote/yr):	*	•	-	893.1371	846,0948	799.2734	743.3885	724.8350	724.8350	_	-
(dph):	•	•	~	10.0	9.5	9.0	8.4	8.2	8.2	-	*
				1	toof fitting	loss facto	ora				
Roof fitting/Status			Qta	antity :	(fa (lb-mote	/yr) Kfb	(lb-moto/()	/r mph^n))	#A		
Vacuum Breaker (10-in. Diam. Well)/Welghted		uation, Gask.		1	1.20	0.1	7	1.00			•
Unstatted Guide-Pale Well/Ungaskated Siddin				1	0.00	67.00)	0.98			
- Roof Ley (3-in. Diameter)/Adjustable, Doubl	e-Duck Roo	is		10	0.25	0.0	7	1.00			
Roof Drain (3-in. Dismeter)/Open				1	0.00	7.00	}	1.40			
Rim Vent (6-in. Dismeter)/Weighted Hech. Ac	tuation, G	ask.		1	0.71	0.10	3	1.00	• .		
Gauge-Hutch/Sample Well (B.In. Diam.)/Weigh			k	1	0.95	0.14	•	1.00			
Gange-float Well (20-In. Diam.)/Abbolted Co	ver, Ungas	k.		1	2.30	5.98)	1.00			
Access Hatch (24-in. Dism.)/Holted Cover, 6	iasketed			1	0.00	0.00	3	0.00			
lotal tosses (lb):		_	_	582.78	589.57	608.25	610.84	580.19	523,59		

TANKS PROGRAM 2.0 EMISSIONS REPORT - DETAIL FORMAT INDIVIDUAL TANK ENISSION TOTALS

Honths in Report: April, May, Jume, July, August, September

•	tosses (the	3.):			
	lotai		•	Total	
Liquid Contents	Withdrawal	Roof-Fitting	kim-Seat	Standing	lotal
Gasolina RVP 9-Sinclair NAPs	97.45	1843,36	1542.41	3385,77	3483.22
Benzene	1.83	12.22	10.22	22.44	24.27
Ethylbenzena	2.02	1.25	1.04	2.29	4.31
llaxana (-n)	1.76	19.28	16.13	35.41	37.17
isouctane	1.47	4.87	4.08	8.95	10.42
Nachthalene C-10, H-8	0.13	0.00	0.00	0.00	0.13
Toluene	9.47	17.84	14.92	32.76	42.24
Xylene (-m)	4.37	3.22	2.70	5.92	10.28
Xylene (-o)	3.40	1.38	1.15	2.53	5.93
Xylene (-p) "Paraxylene"	4.37	2.42	2.03	4.45	8.81
Gasotine (RVP 9)	68.64	1760.88	1490.15	3271.02	3339.66
Total:	97.45	1843.36	1542.41	3385.77	3483.22

TANKS ...OGRAN 2.0 EMISSTONS REPORT - DETAIL FORMAT TANK IDENTIFICATION AND PHYSICAL CHARACTERISTICS

Identification	
Identification No.:	401 season
City:	tolse
Stale;	10
Company:	Sincialr Oil
Type of Tank:	External Floating Roof
Tank Dimensions	
Diameter (ft);	0ል
Volume(gallons):	839400
Turnovers:	69
Paint Characteristics	
Shell Condition:	Light Rust
Shell Color/Shade:	Wilte/White
Shell Paint Condition:	Good
Roof Characteristics	
Roof Type:	Double Deck
Fitting Category:	Typical
Tank Construction and Rim-	Seat System
Constructions	Veliled
Primary Seal:	Rechanical Shoe
Secontary Seal:	Shoe-mount ed
Roof fitting/Status	

Roof fliting/Status	Quant I ty
Vacuum Breaker (10-in. Diam. Hell)/Weighted Hech. Actuation, Gask.	1
Unstatted Guide-Pole Well/Ungasketed Sliding Cover	i
Roof teg (3-in, Diameter)/Adjustable, Double-Deck Roofs	10
Roof Drain (3-in. Diameter)/Open	1
Rim Vent (6-in, Diameter)/Weighted Hech, Actuation, Gask.	i
Gauge Hatch/Sample Well (8-in, Diam.)/Weighted Hech, Actuation, Gask	i
Guuge-Float Well (20-in, Diam,)/Unbolted Cover, Hingask,	1
Access Natch (24-in. Diam.)/Bolted Cover, Gusketed	ì

Heteorological Data Used in Emission Calculations: Boise, Idaho

TANKS PROGRAM 2.0 EMISSIONS REPORT - DETAIL FORMAT LIQUID CONTENTS OF STORAGE TANK

Mixture/Component	Honth	Temper	•	Surf. (deg f) Hax.	Liquid Bulk Temp. (deg f)		Pressures Min.	(psia) Hax.	Vapor Hol. Velght	Liquid Hasa Fract.	Hass	Hol. Velght	Basis for Vapor Pressura Calculations
Gasotine KVP 10-Sincisir NAPs	Ali	53,12	47.11	59.13	51.12	3.5386			66.499	A A100	A A084	7D 11	Durlan 3- 1-1 0050 0-1211 033 0-220 700
Bentena Estratura					•	0.9620	***			0.0207			Option 2: A=6.9050, B=1211.033, C=220.790 Option 2: A=6.9750, B=1424.255, C=213.210
Ethylbenzene								H/A					
Hexane (-n)						1,5952				0.0181			Option 2: A=6.8760, 8=1171.170, C=224.410
i souct and						0.4477				0.0151			Option 1
Naphthalone C-10, H-8						0.0017	7 H/A	H/A		0.0011	0.0000	128.16	Option 2: A=7.1463, B=1831.571, C=211.821
Toluene						0.2655	N/A	N/A		0.0972	0.0080	92.13	Option 2: A=6.9540, B=1344.800, C=219.480
Xylene (-m)						0,1018	N/A	N/A		0.0448	0.0014	106.17	Option 2: A=7.0090, B=1426.266, C=215.110
Xytene (-o)						0.0553	S H/A	N/A		0.0349	0.0004		Option 2: A=6.9980, B=1474.679, C=213.690
Xytena (-p) "Paraxytene"						0.0763	3 H/A	H/A		0.0448	0.0011	104,16	Option 2: A=7.0206, B=1474.403, G=217.773
Gasolina (RVP 10)						4.4434	N/A	N/A		0.7043	0.9717		Option 4: RVP=10.00, ASTH Stope=2.5

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TANKE PROGRAM 2.0 EMIBETONE REPORT T DETAIL FORMAT DETAIL CALCULATIONS (AP-42)

Assumt Emission Catcutations

Rim Seal Losses (1b):	2982,8153
Seul fector (lb-mole/ft yr (mph)^n):	0.8000
Avarage Wind Speed (ngh):	8.8
Seal-related Wirkl Speed Exponent;	1.20
Value of Vapor Pressure functions	0.0687
Vapor Pressure at Daily Average Light	
Surface lesperature (psia):	3.538575
lank Diameter (11):	03
Vapor Holecular Weight (lb/lb-mole):	66.498645
Product factor:	1.0000
Withdrawal Losses (tb):	181.5436
Ammat Het Throughput (gal/yr):	58254360
Shell Clingage factor (bbl/1000 sqft):	0.0015
Average Organic Liquid Density (ib/gat):	0,0000
Turk Dimmeter (ft):	04
Roof Fitting tosses (tb):	3568,1163
Value of Vapor Pressure function:	0.0687
Vapor Holecular Weight (1b/lb-mole):	66.498645
Product factor:	1.0000
lot. Roof fitting toss fact.(lb-mole/yr):	780,6081
Average Wind Speed (mph):	a.a

	Roof fitting Loss	factors	
Quart LEY	Kfu (lb-mate/yr)	Kfb (lb-mote/	(yr mph^n)) m
1	1.20	0.17	1.00
1	0.00	67.00	0.98
10	0.25	0.07	1.00
1	0.00	7.00	1,40
1	0.71	0.10	1,00
l l	0.95	0.14	1,00
1	2.30	5,90	1,00
1	0.00	0,00	0.00
	1	Quantity KF4 (lb-mole/yr) 1 1.20 1 0.00 10 0.25 1 0.00 1 0.71 1 0.95 1 2.30	1 1.20 0.17 1 0.00 67.00 10 0.25 0.07 1 0.00 7.00 1 0.71 0.10 1 0.95 0.14 1 2.30 5.90

Yotal Losses (1b):

6712.50

TANKS PROGRAM 2,0 EMISSIONS REPORT + DETAIL FORMAT INDIVIDUAL TANK EMISSION TOTALS

Annual Emissions Report

	Losses (lb: Total	1.):		Total	
Liquid Contents	Withdrawal	Roof-fitting	Rim-Seal	Standing	ĭotal
Gasoline RVP 10-Sinclair MAPs	181.56	3568.12	2982.82	6550.93	67.32.50
Benzeno	3.41	20.04	16.75	36.79	40.20
Ethylbenzene	3.76	1.95	1.63	3.58	7.34
Hexane (-n)	3.29	31.99	26.74	58.73	10.53
Isooctane	2.74	7.48	6,25	13.74	16.48
Nuphthalene C-10, H-8	0.24	0.00	0.00	0.00	0.24
Yol vena	17.65	28.59	23.90	52.50	70.14
Xylena (-m)	8.13	5.05	4.23	9.28	17.41
Xylene (-o)	6.34	2.14	1.79	3.92	10.26
Xylene (-p) "Paraxylene"	8.13	3.79	3.17	6.96	15.09
Gasoline (RVP 10)	127.88	3467.08	2898,36	6365.44	6493.31
lotal:	181.56	3568.12	2982.82	6550.93	4732.50

TANKE PROGRAM 2,0 EMISSIONS REPORT - DETAIL FORMAT TANK IDENTIFICATION AND PHYSICAL CHARACTERISTICS

Identification 401 season identification Ho.: sa jog City: State: Company: Sinctair Oil Type of lanks External floating Roof Tank Dimensions Dismuter (II): 60 Volume(gullons): 839400 69 turnovers: Paint Characteristics Shell Conditions Light Rust Shell Color/Shade: White/White Shell Paint Condition: Good Roof Characteristics Double Deck Roof Type: fitting Category: Typicat Tunk Construction and Rim-Seal System Helded Constructions Mechanical Shoe Primary Seat: Shoe mounted Secondary Seal:

Roof Fitting/Status	Quantity
Vacuum Breaker (10-in, Diam, Well)/Weighted Mech. Actuation, Gask.	1
this lotted Guide-Pole Hell/tingasketed Sliding Cover	1
Roof teg (3-in. Dimmeter)/Adjustable, Double-Deck Roofs	10
Roof Drain (3-in. Diameter)/Open	1
Rim Vent (6-in. Diameter)/Heighted Mach. Actuation, Gask.	1
Gange-Netch/Sample Vell (8-In. Diam.)/Veighted Hach. Accustion, Gask	1
Gange-Float Well (20-in, Diam.)/Unholted Cover, Ungask.	1
Access Natch (24-in. Dism.)/Bolted Cover, Gasketed	1

Heteorological Data Used in Emission Culculations: Boise, Idaho

TANKS PROGRAM 2.0 EMISSIONS REPORT TOBTAIL FORMAT LIQUID CONTENTS OF STORAGE TANK

Hixture/Component	Honth			(deg f)	Liquid Bulk Temp. (deg f)		Pressures Min.	(psia) Max.		Liquid Mass Fract,	Hass	Hol. Velght	Basis for Vapor Pressure Culculations
Gasotine RVP 13.5-Sinclair NAP	fEB	45.64	41.69	49.59	51.12	4.3253	N/A	N/A	61.859				
g eus eise						0.7734	H/A	H/A		0.0188	0.0038	78.11	Option 2: A=6.9050, B=1211.033, C=220.790
Ethylbenzena						0.0647	N/A	H/A		0.0207			Option 2: A=6.9750, B=1424.255, G=213.210
Gasoline (RVP 13.5)						5.3941	N/A	H/A		0.7043	0.9814	61.50	Option 4: RVP=13.50, ASTH Slope=2.5
liexane (·n)						1.3001	H/A	H/A		0.0181	0.0061	86.17	Option 2: A=6.8760, 8=1171.170, C=224.410
I sooc tane						0.3111	N/A	H/A		0.0151			Option 1
Haphthalene C-10, it-8						0.0012	N/A	N/A		0.0013	0,0000	128.16	Option 2: A=7.1463, B=1831.571, C=211.821
Yolukna						0.2078	N/A	H/A		0.0972	0.0052	92.13	Option 2: A=6.9540, 8=1344.800, C=219.480
XAfaire (-ie)						0.0777	H/A	H/A		0.0448	0.0009	106, 17	Option 2: A=7.0090, B=1426.266, C=215.110
Xylene (-a)			•			0.0417	N/A	H/A		0.0349	0.0004	106.17	Option 2: A=6.9980, B=1474.679, C=213.690
Xylene (·p) "Paraxylene"						0.0581	H/A	H/A		0.0448	0.0007	106, 16	Option 2: A=7.0206, B=1474.403, C=217.773
Gasoline NVP 13.5-Sinclair HAP	HAR	48.57	43.26	53.89	51.12	4.5869	N/A	H/A	61,873				
Benzene						0.8432	H/A	H/A		0.0188	0.0039	74.11	Option 2: A=6.9050, 8=1211.033, C=220.790
Ethylbenzene						0.0721	H/A	H/A		0.0207	0.0004	106.17	Option 2: A=6.9750, B=1424.255, C=213.210
Gasoline (RVP 13.5)						5.7178	* #/A	H/A		0.7043	0.9808	61.50	Option 4: RVP=13.50, ASTH Slope=2.5
Hennie (-13)						1,4099	₩/A	H/A		0.0141	0.0062	86.17	Option 2: A=6.8760, B=1171.170, C=224.410
lacoctane						0.3622	₩/A	N/A		0.0151	0.0013	114.22	Option 1
Haphthalene C-10, H-8						0.0014	H/A	H/A		0.0013	0.0000	128.16	Option 2: A=7.1463, 8=1831.571, C=211.821
ी भी राज्याव						0.2290	H/A	- #/A		0.0972	0.0054	92.13	Option 2: A=6.9540, B=1344.800, C=219.480
Xylene (-m)						0.0865	N/A	H/A		0.0448	0,0009	104.17	Option 2: A=7.0090, B=1426.266, C=215.110
Xylene (-o)						0.0466	H/A	N/A		0.0149	0.0004	106.17	Option 2: A=6.9980, B=1474.679, C=213.690
Xylene (-p) "Paraxylene"						0.0648	¥/A	H/A		0.0448	0.0007	106.16	Option 2: A=7.0206, B=1474.403, C=217.773
Gasoline RVP 13.5-Sinclair HAP	DEC	43.27	40.11	46.44	51.12	4.1230	N/A	H/A	61.847			•	
gentaira						0.7206	N/A	H/A		0.0188	0.0037	78.11	Option 2: A=6.9050, B=1211.033, C=220.790
Ethylbenzene						0.0591	N/A	H/A		0.0207	0.0003	106.17	Option 2: A=6.9750, B=1424.255, C=213.210
Gasoline (SVP 13.5)						5.1437	H/A	H/A		0.7043	0.9820	61.50	Option 4: KVP=13.50, ASIN Slope=2.5
Haxana (-U)						1.2167	H/A	#/A		0.0181	0,0060	86.17	Option 2: A=6.8760, H=1171.170, C=224.410
#00C (TUO						0.2699	N/A	H/A		0.0151	0.0011		Option 1
Naphthulene C-10, N-8						0.0011	N/A	H/A		0.0013	0.0000		Option 2: A=7.1463, B=1831.571, C=211.821
Yoluana						0.1919	N/A	N/A		0.0972		92.13	Option 2: A=6.9540, B=1344.800, C=219.480
Xyleise (-m)						0.0712	N/A	H/A		0.0448	0.0009	104.17	Option 2: A=7.0090, 8=1426.266, C=215.110
Xylene (-o)						0.0380	N/A	H/A		0.0349	0.0004	106.17	Option 2: A=6.9980, B=1474.679, C=213.690
Xylene (-p) "Paraxylene"						0.0532	N/A	H/A		0.0448	0.0006		Option 2: A=7.0206, B=1474.403, C=217.773

TANKO PROGRAM 2.0 EMIGGIONG REPORT = DETAIL FORMAT DETAIL CALCULATIONG (AP-42)

Honth:	Yanınat	february	Harch	April	Hay	June	y lut	August	September	October	November	Dei
Rim Seal Losses (lb):	*	300,3059	365.7037	•		-	•				•	24:
Seal factor (lib-mole/ft yr (aph)^n);		0.8000	0.8000	•	-	-	•	•		-	•	ŧ
Average Wind Speed (aph):	, *	9.0	10.0	-	-	•	•	-	•	-	•	
Seal-related Wind Speed Exponent:	•	1.20	1.20	•	•	•	-	•	-	-	-	
Value of Vapor Pressure Function: Vapor Pressure at Daily Average Liquid	•	0.0869	0.0932	•	•	1 -	•	•	•	ar .	•	f
Surface Temperature (psia);	-	4.325251	4.586899	•	*	•	-	-	-	-	-	4.
Tank Diameter (ft):	-	60	04	•	-	-	-	-	•	~	-	
Vapor Holecular Weight (lb/lb-mole):	-	61.858732	61.873194	•	- .	-	-	-	+	•	•	61.1
froduct factors	H-	1.0000	1.0000	•	•	•	•	•	-	*	-	*
Withdrawal Losses (th):	_	16.2423	16.2423	•	-	•		•	-	-	•	16
Het Throughput (get/month):	-	4854530	4854530				•		-	-	•	41
Shell Clingage factor (bbl/1000 sqft):	•	0.0015	0.0015	-	•	-	-	-	•	-	-	- 1
Average Organic Liquid Density (th/gat):	•	0.0000	0.0000	-	•	•	-	-	-		-	ŧ
lunk Diameter (ft):	-	60	60	•		•	-	-	•	•	*	
Roof fitting tosses (lb):		358,0363	429.3448		_	•	*			•	*	30;
Value of Vapor Pressure Function:	•	0.0869	0.0932	_	-	•		•	-	•	-	(
Vapor Holecular Weight (lb/lb-mole):	-	61.858732	61.873194	-	•	•	•		-	*		61.8
Product factor:		1.0000	1,0000			-	-	-	*	-	•	1
lot. Roof Fitting Loss Fact.(lb-mole/yr):	-	799.2734	893.1371	•	•	•	•	-	-	•	Ł	715
Avutuga Wint Spucit (1144):	•	9.0	10.0	•	-	•	•	•	•	•	-	
	,				Roof fitting	Loss Factors	.					
Roof Fitting/Status			Octan	alty	KFa (thrapte/		h-mote/(yi	((n^ikpn	#			
Vacion Brauker (10-fn, Diam, Hell)/Heighter	d Hech. Act	wation, Gu			1.20	0.17		1.00	****			
this lotted Gulde Pole Vett/Angasketed Stidle			i		0.00	67.00		0.98				
Roof Leg (3-in. Diameter)/Adjustable, Double		of s	10	•	0.25	0.07		1.00				
Roof Drain (3-in. Diameter)/Open				ł	0.00	7.00		1.40				
Rim Vent (6-in. Diameter)/Weighted Hech. Ad	ctuation. (Gask.			0.71	0.10		1.00				
Garga-Hatch/Sumple Well (8-in, Diam.)/Neigh			Gask 1		0.95	0.14		1.00				
Gange-Float Well (20 In. Blum.)/Unbolted Co				j	2,10	5.90		1,00				
Access Batch (24-In, Dism.)/Bolted Cover, (i	i	0.00	0.00		0.00				
lotal Lussus (lb):	*	6/4.58	811,29	-	•	-			*	•		5

Tanka Program 2.0 Enibaiona report - Detail Format Individual Tank Enibaion Totala

Honths in Report: February, March, December

	tosses (the Total	4.):		Yetal	
Liquid Contents	Vi thdravat	Roof-fitting	Rim-Scul	Stunding	latef
Garotine RVP 13.5-Sinclair BAP	48.73	1090.18	916.00	2006,19	2054.91
Sentene	0.92	4.11	3.46	7.57	8.49
Ethylbenzene	1.01	0.38	0.32	0.70	1.71
Gasoline (RVP 13.5)	34.32	1069.83	898.89	1968,72	2003.04
liexane (-n)	0.88	6.65	5.59	12.24	13.13
[soctane	0.74	1.34	1.13	2.47	3,20
Haphthalene C-10, H-8	20.0	0.00	0.00	0.00	۵۵.0
Toluene	4.74	5.73	4.81	10.54	15.28
Xylene (-m)	2.18	0.99	0.83	1.82	4.00
Xyiene (-o)	1.70	0.41	0.35	0.76	2.46
Xylene (-p) "Paraxylene"	2.18	0.74	0.62	1.36	3.54
Yotalı	48.73	1090.18	916.00	2006.19	2054.91

TANKU DGRAM 2,0 EMIGSIONS REPORT T DETAIL FORMAT TANK IDENTIFICATION AND PHYSICAL CHARACTERISTICS

Quantity

10

t season ise nctuir Oit carnut flouting Roof
nclair Oil Larnul Floating Roof
ternul Floating Roof
ternul Floating Roof
-
60
839400
69
ght Rust
ite/thite
od -
able Deck
pical
1 System
lded
charical Shoe
on-Worns eq

Hereorological Data Used in Emission Calculations: Boise, Idaho

Gauge-Hatch/Sample Well (8-in. Dimm.)/Weighted Hech. Actuation, Gask

Rim Vent (6-in. Dismeter)/Weighted Mech. Actuation, Gask.

Guige-float Well (20-In. Olam.)/Unbolted Cover, Ungask. Access Batch (24-In. Diam.)/Bolted Cover, Gasketed

Roof Drain (3-in. Diameter)/Open

TANKS PROGRAM 2,0 EMISSIONS REPORT - DETAIL FORMAT TANKS PROGRAM 2,0

Mixture/Component	Honth	-	*	Surf. (deg F) Hax.	•		Pressures Hin.	(psia) Nax.	Väpor Hol. Velght	Liquid Mass Fract.	Vapor Mass fract.	Hol. Basis for Vapor Pressure Weight Calculutions
Gasoline RVP 11,5-Sinclair HAP	VOH	2.A. Q.A.	47 RA	51.04	S1 12	3.6717	7 N/A	11/4	64.415			•
Bentene	AD4	70.70	76.00	21.47	#1.14	0.8042	,,,,,	H/A	• - • -	0.0188	0.0046	78,11 Option 2: A=6.9050, 8=1211.033, C=220.790
Ethylbenzene						0.0679		N/A		0.0207		104.17 Option 2: A=6.9750, B=1424.255, C=213.210
Hexane (-n)						1.3486	7-0 11	H/A		0.0181		86.17 Option 2: A=6.8760, 8=1171.170, C=224.410
lacoctane						0.3341		N/A		0.0151	0.0015	
Naphthalene C-10, H-8						0.0013		N/A		0.0013		128.16 Opcion 2: A=7.1463, B=1831.571, C=211.821
Totuene						0.2171	N/A	H/A		0.0972	0.0064	92,13 Option 2; A=6.9540, 8=1344.800, C=219.480
Xylena (-A)						0.0816	S N/A	N/A		0.0448	0.0011	1 106.17 Option 2: A=7.0090, B=1426.266, C=215.110
Xylene (-o)						0.0436	A/H	N/A		0.0349	0.0005	i 106.17 Option 2: A=6.9980, B=1474.679, C=213.690
Xylene (-p) "Paraxylene"						0.0610	A/A	N/A		0.0448	8000,0	1 106.16 Option 2: A=7.0206, B=1474.403, C=217.773
Gaugitan (OVO 11 5)						4 4014	A D/A	11 ta		0 7043	A 0774	AC DO Coston A: EVP=11.50 ASIM Stone=2.5

TANKS ...OGRAM 2,0 ENTESIONS REPORT - DETAIL FORMAT DETAIL CALCULATIONS (AP-42)

Honth:	January	february	March	April	Hay	June	July	August	September	October	Hovenber De
Rim Seul Losses (Ib):											237,5952
Seal factor (lb-mote/ft yr (mgh)^n):		-	_	-	-	_	_	-	-	-	0.8000
Average Wind Speed (aph);	*							-			8.4
Scal-related Wind Speed Exponent:	*	-	-	-	•			_	•		1.20
Value of Vapor Pressure function:		•	•			•		+	_		0.0717
Vapor Pressure at Daily Average Liquid											
Surface Temperature (psia):	•	•			-	-	-	+	_	-	3.671694
Tork Dissector (ft):			-	•	-	•	•	•	•	. .	60
Vapor Notecular Height (th/th-mole):	-	*		-		•	-	_			64.415283
Prubict factor:	٠	-	•	-	-	•	•	**	•	*	1.0000
Withdrawal Losses (lb):		-		_	•	u u	*		*		16,2423
Net Throughput (gal/south):		•	-		•			-	4	•	4854530
Shell Clingage factor (thi/1000 sqft):	-	-	-	#		**	-	-	-		0.0015
Average Organic Liquid Density (16/gal):	**	•	•	**	•	-	•	-	₩	-	0.0000
turk Planeter ((1):			•	**	•	-	•	•	•	-	60
Roof fitting Losses (lb):		•				-					286.2049
Value of Vapor Pressure function:	-	-	-	•	-	*	-	-	-		0,0717
Vapor Molecular Weight (lb/lb-amie):	•	-	-	-	-	•	-	•	-	-	64.415283
Product factor:		*		•		-	•	•		+	1,0000
Yot. Roof fitting Loss Fact.((b-mole/yr);	~	•	-	•		•	•	•	•	•	743.3885
Average Wind Speed (aph):	•	•	•	• .	7	* .	•	•	•	-	8.4
Roof fitting/Status			Quant	ity	Roof fitting KFm (lb-mole	Loss factors /yr) KFb (i		({a^ákp⊪ n	a¥.	•	
**************************************					* 36			* * * - * - * - * - * - * - *	*		
Vacuum Breaker (10-in, Dism, Well)/Weighted		uation, bask.			1.20	0.17		1.00			•
this lotted finide-Pole Well/Ungasketed Slidir		.d.a	10		0.00	67.00		0.98			
Roof Leg (3-in. Diameter)/Adjustable, Doubl	I & D & C X NOO	:13	10		0.25	0.07		1.00			
Roof Drain (3-in. Diameter)/Open	ntiutton C	ast			0.00 0.71	7.00 0.10		1.40 1.00			
Nim Vent (6-in. Dimmeter)/Heighted Hech. Ac					0.73	0.14		* -			
Gauge-Natch/Sample Well (8-In. Dlam.)/Wely)			` !		2.30	5.90		1.00 1.00			
Gauge-float Well (20-in, Diam,)/Unbolted Co Access Hatch (24-in, Diam,)/Bulted Cover, (·R.	!		0.00	0.00		0.00			
Access Hatta (47 iii. Plam. Manifed tayer, t	Jaokei Cu		•		u.uu	9,00		6.10			
lotal Losses (1b):	•	•	-	•	•	•		+	-	•	540.04

TANKS PROGRAM 2.0 EMISSIONS REPORT - DETAIL FORMAT INDIVIDUAL TANK EMISSION TOTALS

Months in Report: November

	Losses (lb: Total		•	Total			
Liquid Contents	Withdrawat	Roof-fitting	# m·Seal	Standing	Total		
Gasoline RVP 11.5-Sinclair HAP	16.24	286.20	237.60	523.80	540.04		
Benzene	0.31	1.30	1.08	2.39	2.69		
Ethylbenzena	0.34	0.12	0.10	0.22	0.56		
Hexane (-n)	0.29	2.11	1.75	3.86	4.15		
Isooctano	0.25	0.44	0.36	0.80	1.04		
Nachthalone C-10, H-8	0.02	0.00	0.00	0.00	0.02		
loluen	1.58	1.82	1.51	3.33	4.91		
Xylene (-m)	0.73	0,32	0,26	0.58	1.31		
Xylene (-e)	0.57	0, 13	0.11	0.24	0.81		
Xylene (-p) "Paraxylene"	0.73	0.24	0.20	0.43	1,14		
Gasoline (RVP 11.5)	11.44	279.73	232.22	511.95	523.39		
Total:	16.24	286.20	237.60	523.80	540.04		

TANK IDENTIFICATION AND PHYSICAL CHARACTERIOS

	Soise	9	Sincials of	External Floating Roof
Identification Ho.:	City:	States	Custany:	Type of Sank;

Type of lank:	Exceinal Flobiling A
lank Dissensions	
blaneter (ft):	09
Volume(gallons):	839400
Turnovers:	69

99	i. ight Aust Unite/Uhite Bood	
-	15 THE TOTAL PROPERTY OF THE TOTAL PROPERTY	•
Volume(gallons); [urnovers:	Paint Characteristics Shelt Condition: Shelt Color/Shade: Shutt Paint Condition:	Roof Characteristics

,	Double Deck	Typical	
Roof Characteristics	Roof Type:	fitting Category:	

Riss Soul System	Welded	Mechanical Shoe	Shoe mark ed
Tunk Construction and Ria-Soul System	Constructions	Primary Scal:	Secondary Scale

hoof elicing/biains and animiticy	Quantity
Vactoral Breaker (10-in. Diam, Well)/Weighted Mech. Actuation, Gask. Unstatted Guide-Pole Meil/Ingasketed Silding Cover. Roof Lea (5-in. Diameiar)/Adhistable. Double Dect Roofs	
Roof Drain (3-in. Diameter)/Open Rim Vent (6-in. Diameter)/Open Gauga-Hatch/Sumple Well (8-in. Diam.)/Weighted Meth. Actuation, Gask Gauga-Float Well (20-in. Diam.)/Weighted Cover, Ungask. Actess Halch (24-in. Diam.)/Boited Cover, Gaskated	} • • • • •

Melegratogical Data theed in Emission Calculations: Boise, Idaha

TANKS PROGRAM 2.0 EMISSIONS REPORT + DETAIL FORMAT LIQUID CONTENTS OF STORAGE TANK

Mixture/Component	Honth		atures	Surf, (deg f) Hax.	Liquid Bulk Temp. (deg f)		Pressures Kin.	(psia) Hax.	Vapor Hol. Veight	Liquid Nass Fract,	Hass	Hol. Weight	Basis for Vapor Pressure Calculations
Gasoline RVP 15-Sinciair HAPs	JAH	42.41	39.23	45.60	51.12	4.5876	H/A	N/A	800.14				
Benzene '						0.7021	H/A	H/A		0.0188	0.0032	78.11	Option 2: A=6.9050, B=1211.033, C=220.790
Ethylbenzene						0.0573	H/A	H/A	i	0.0207	0.0003	106.17	Option 2: A=6.9750, 8=1424.255, C=213.210
Mexane (-n)						1.1875	N/A	H/A	•	0.0181	0.0053	86.17	Option 2: A=6.8760, 8=1171.170, C=224.410
leoctane						0.2550	H/A	H/A		0.0151	0.0009	114.22	Option 1
Nachthalene C-10, H-8						0.0010	N/A	H/A		0.0013	0.0000	128.16	Option 2: A=7.1463, B=1831,571, C=211.821
Totuene						0.1864	N/A			0.0972	0.0044		Option 2: A=6.9540, B=1344.800, C=219.480
Xylena (-m)						0.0691				0.0448			Option 2: A=7.0090, 8=1426,266, C=215.110
Xylene (-o)						0.0366	*-*			0.0349	0.0003	106.17	Option 2: A=6.9980, B=1474.679, C=213.690
Xylena (-p) "Paraxylene"						0.051					0,0006		Option 2: A=7.0206, 8=1474.403, C=217.773
Gasolina (RVP 15)						5.7174				0.7043	6 9842		Ourion 4: RVP=15.00 ASTH Slope=2.5

TANKE ...OGRAM 2.0 EMISSIONS REPORT - DETAIL FORMAT DETAIL CALCULATIONS (AP-42)

Month:	January	february	Harch	April	Нау	June	July	August	September	October	Hovember	D:
Rim Seal Losses (1b):	275.9286	-			-	-			_			
Seal factor (lb-mole/ft yr (myh)^n):	0.8000	*	-				-	•			*	
Average Wird Speed (aph):	8.0		-		-	•	_	-	•	-	•	
Seal-related Wind Speed Exponent:	1,20	•		-	•	-	•	*		-	*	
Value of Vapor Pressure function:	0.0932	•	-		•	•	-	•	-	-	•	
Vapor Pressure at Dally Average Liquid												
Surface lemperature (psta):	4.587543	•	•		• .	•		-				
Tunk Diameter (ft):	60	-		-	₩			*	-	+	*	
Vapor Holecular Weight (1b/lb-mole):	61.007919	*	-	+			•	-	-	-	-	
Product factor:	1,0000	•	•	-	-	-	-	•	•		•	
Withdrawat tosses (tb):	16,2423		*		-		_		u	-	•	
Het Ihroughput (gal/sonth):	4854530		-	-	•		*			-		
Shell Clingage Factor (Ubl/1000 sqft):	0.0015	-	-	-	-	4	-	•	-	-	-	
Average Organic Liquid Density (1b/gal):	0,0000	-	-		**	*	•	-	•	*	-	
lank Diameter (ft):	04	,	•	•	•	•	•		•		•	
Roof Fitting losses (1b):	334,8489	•	-		•		-		-	•	-	
Value of Vapor Pressure functions	0.0932	-	-	-	•	-	-	-	-	-	-	
Vapor Holecular Weight (lb/lb-mole):	61.007919	•		-	-	-	-	•	•	+	•	
Product factor:	1,0000	•	•	-	-	-	+	-	**	-	•	
lot. Roof fitting loss fact.(lb-mole/yr);	706.3198	-		-		-	-	-		-	-	
Average Wind Speed (mph):	0.6	-	**	*	•	•	-	-	•	•	•	
Roof Fitting/Status			Buan		Roof fitting Kfa (lb-mole			{(a^dopa sy	gh:			
**************************************					***********				*****			
Vacuum Broaker (10-in. Diam. Well)/Weight		uation, Gask.	1	}	1.20	0.17		1.00				
tinslotted Guide-Pole Well/Hingasketed Slid	ing Cover		· 1	İ	0.00	67.00		0.98				
Roof Leg (3-in. Dimmeter)/Adjustable, pod	ble-Deck Roo	fu	10	ì	0.25	0.07		1.00				
Roof Drain (3-in. Diameter)/Open			1	İ	0.00	7.00		1.40				
Alm Vent (6-in. Diameter)/Weighted Hech.			i	İ	0.71	0.10		1.00				
Gange-Hatch/Sample Wolt (8-in. 91am.)/Nei			uk 1	ļ	0.95	0.14		1.00				
Garge-Float Well (20 In. Dimm.)/Whitselted (k.	1		2.30	5.90		1.00				
Access Match (24-in. Dism.)/Solted Cover,	Guske Led		1	ŀ	0.00	0.00		0.00				
Total Losses (lb):	627.02		•	-	-	*			•	•	-	

INDIALDAY LYNK ENTRETON LOLYTH ENTRETONE BEBORT TOELYT LOUNYL LYNKE BEGRAM 5'0

Months in Report: January

	Losses (lbs. Total);	•	Total	
Liquid Contents	Withdrawat .	Roof-fitting	Rim-Sent	Stending	Total
Gasoline RVP 15-Sinciair HAPs	16.24	334.85	275.93	610.78	627.02
Benzene	0.31	1.08	0.89	1.97	2.28
Ethylbenzene	0.34	9.10	0.08	0.18	0.51
Hexane (-n)	0,29	1.76	1.45	3.21	3.50
lsoctane	0,25	0.32	0.26	0.57	0.82
Nachthalene C-10, H-8	0.02	0.00	0.00	0.00	0.02
Toluene	1.58	1.48	1.22	2.71	4.28
Xylene (-m)	0.73	0.25	0.21	0.46	1.19
Xylena (-o)	0.57	0.11	0.09	0.19	0.74
Xylene (-p) "Paraxylene"	0.73	0.19	0.16	0.34	1.07
Gasoline (RVP 15)	11.44	329.57	271.58	601.14	612.58
Totat:	16.24	334 AS	275 93	A10 78	A27 A2

Title V Engineer:

Company Name:

DM Shiciair Oli Corp.

Location: Date Created: Today's Date: Boise, Idaho January 4, 1996 01/25/96

Calculation of Loading Rack Emissions

THIS SPREADSHEET IS DESIGNED TO ESTIMATE EMISSIONS BY MONTH

ASSUMPTIONS

- 1. TANKS2.0 provides the monthly average true vapor pressure of the gasoline product AND the moter fraction of HAP constituents in the vapor phase of the gasoline product.
- 2. RVP 11 gasoline with Sinclair's HAPs used for all calculations.

Reference:

AP-42, Sect. 5.2

only January is changed below

JANUARY

JANUARY

JANUARY

LL = 12.46 SPM/T

where Lr. = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

执手声

P = true vapor pressure, psla

PF 3.1679

M = molecular weight of vapor, lb/lb-mole

65.103 511.1

T = absolute temperature, 'R

19438.3 E^3 gallons

JANUARY Gasoline Throughput, gallons per month, .

JANUARY

HAPs	Vapor Mass	Li	Emissions
Compounds	fresion	(11/19 1 94))_	(Heenineelli)
Benzene	0.0046	0.0231	0.22
Ethylbenzene	0.0004	0 0020	0.02
Hexane	0 0075	0.0377	0.37
Maphthalene	0.0000	3.00E-06	2.91E-05
Tohiene	0 0063	0.0317	0.31
Frimethylpentane (2,2,4)	0.0013	0.0065	0.06
Xylene-m	0.0011	0.0055	0.05
Xylene-o	0.0004	0 0020	0.02
Xylene p	0.0008	0 0040	0.04
Gasoline (RVP-11)	0.9775	4 9146	47.77

TOTAL.

TOTAL-HAPS ONLY

FEBRUARY	FE	BRUARY	fE!	BRUARY
LL = 12.48 SPM/T	where Li. = loadin	g loss, lb/1000	gal	Li # See Chart
			ensioniess, 1.0	S # scs
		por pressure,		P # 3 892
			rapor, lib/lib mole	M # 65.122
		de lemperature		Te 1 511.i
		•	•	
Gasoline Throughpul, ga	illons per month =			19438.3 E^3 gallons
FEBRUARY				
HAPs	Mole	la 1	Emissions	
Communids	Fraction 1		(glypenhee)	
Benzene			0.26	
Elhyllmnzene	0 0004	0.0025	0.02	
Hexans	0 0077	0.0476	0.46	
Naphthalene	0 0000	3 68E-06	3 50E-05	
Tokiene	0 0066	0.0408	0.40	
Trimelhylpentans (2,2,4)	0.0015	0 0093	0.09	•
Xylene m	0.0011	0.0008	0.07	
Xylune o	0.0005	0.0031	0.03	
Xylene p	0 0008	0.0049	0.05	
Gasoline (RVP-11)	0.9766	6 0341	58.65	
TOTAL.			60.05	
TOTAL-HAPS ONLY		À	1.40	
1 17 12		311	150 A 150 A	
MARCII	MARCH			MARGII
Li. # 12.46 SPM/T	where Li = loadir	g loss, lb/1000) gaj	Lug \$50 Chart
	S = saluri	flon factor, dia	nensioniess, 1.0	S = see
	P = true v	apor pressure,	psta	P # 3.6011
	M ≃ moted	that weight of	vapor, Ibāb mole	M e 65.136
	T = absol	ae lemperatur	s, 'R	T#
I Gasoline Throughput, g	allons per month =			19438.3 E*3 gallons
MARCH				
HAPs	Mole		Emissions	
Connected Benzene	fresten		Ter/menth)	
1		0.0200	0.27	
Elliybenzene Hexane	0 0005 0 0078	0 0029 0 0446	0.03 0.43	
Naphihalena :				
i sefummene				
Tohana	0.0000	3.41E-06	3.31E-05	
Toluene Tubustindosotana (2.2.4)	0.0000 0.0078	3.41E-06 0.0446	3.31E-05 0.43	
Transthylpeniane (2,2,4)	0.0000 0.0078 0.0017	3.41E-06 0.0446 0.0097	3.31E-05 0.43 0.09	
Trinnethylpeniane (2,2,4) Xylene-m	0.0000 0.0078 0.0017 0.0012	3.41E-06 0.0446 0.0097 0.0069	3.31E-05 0.43 0.09 0.07	
Trknethylpeniane (2,2,4) Xylene-m Xylene-o	0.0000 0.0078 0.0017 0.0012 0.0005	3.41E-06 0.0446 0.0097 0.0069 0.0029	3.31E-05 0.43 0.09 0.07 0.03	
Trimethylpentane (2,2,4) Xylene-m Xylene-o Xylene-p	0.0000 0.0078 0.0017 0.0012 0.0005 0.0009	3.41E-06 0.0446 0.0097 0.0069 0.0029 0.0051	3.31E-05 0.43 0.09 0.07 0.03 0.05	
Trknethylpeniane (2,2,4) Xylene-m Xylene-o	0.0000 0.0078 0.0017 0.0012 0.0005	3.41E-06 0.0446 0.0097 0.0069 0.0029	3.31E-05 0.43 0.09 0.07 0.03	
Trimethylpentane (2,2,4) Xylene-m Xylene-o Xylene-p	0.0000 0.0078 0.0017 0.0012 0.0005 0.0009	3.41E-06 0.0446 0.0097 0.0069 0.0029 0.0051	3.31E-05 0 43 0 09 0 07 0 03 0 05 54.23	
Trimethylpentane (2,2,4) Xylene-m Xylene-o Xylene-p Gusotine (RVP-11)	0.0000 0.0078 0.0017 0.0012 0.0005 0.0009	3.41E-06 0.0446 0.0097 0.0069 0.0029 0.0051	3.31E-05 0.43 0.09 0.07 0.03 0.05	

APRIL LL = 12.46 SPM/T APRIL

APRIL

where ti. = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, pala

M = molecular weight of vapor, livib mole

T = absolute temperature, 'R

3,8986 19438.3 E^3 gallons

Gasoline Throughput, gallons per month =

Α	Ð	O	22
	F	л	н

HAPs	Mole	1.1.	Emissions
<u>Compounds</u>	Fraction	All 10 Latell .	(Ten/menth)
Benzena	0.0050	00376	de.c
Ethylbenzene	0.0005	0.0031	0.03
Hexans	0.0080	0 0495	0.48
Naphihalene	0.0000	3.69E-06	3.69E-0\$
Tokiene	0.0072	0.0446	0 43
Trknethylpentane (2,2,4)	0.0019	0.0118	0.11
Xylene-m	0.0013	0.0080	0.08
Xylene-o	0.0005	0.0031	0.03
Xylene-p	0.0009	0.0056	0.05
Gasoline (RVP-10)	0,9747	6.0341	58,65
TOTAL.		1	60 17
TOTAL-HAPS ONLY		1	1.52

MAY

MAY

MAY

La = 12.46 SPM/T

where tic = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, pala

M = molecular weight of vapor, lb/lb-mole

T = absolute temperature, 'R

In the Charles 65.165 511.1 19438.3 E*3 gallons

Gasoline Throughpul, gallons per month =

IIAPs	Mole	Lı	Emissions
Compounds	fraction	. (11219 a et) .	(Heenheeth)
Benzene	0.0052	0.0352	0.34
Ethykienzene	0.0005	0.0034	0.03
l texana	0.0083	0.0563	0.55
Naphilialene	0.0000	4.04E-06	3.93E-05
Toluene	0.0075	0.0508	0.49
Trimethylpentane (2,2,4)	0.0020	0.0138	0.13
Xylene-m	0.0014	0.0095	0.09
Xylane-o	0.0006	0.0041	0.04
Xylene-p	0.0010	0.0068	0.07
Gasoline (RVP-11)	0.9735	6 5981	64.13
TOTAL.			65.87
TOTAL HAPS ONLY		•	1.75

12. 44 h

JUNE LL # 12.46 SPM/T

JUNE JUNE where LL = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psia

M = molecular weight of vapor, lb/lb-mole

T = absolute temperature, 'R

Gasolina Throughput, gallons per month, =

HAPs	Mole	lı.	Emissions
Compounds	Fraction (llu 10 i gal)	(Terementh)
Benzene	0.0054	······································	95.0
Elliyibenzene	0.0006	0.0044	0.04
i lexane	0.0085	0.0623	0.61
Naphitratoria	00000	4.37E-06	4,25€-05
Tuktettä	0.0079	0.0579	0.66
filmelhylpeniane (2,2,4)	0.0022	0.0161	0.16
Xylene-m	0.0014	0.0103	0.10
Xylene-o	0 0000	0.0044	0.04
Xylene-p	0.0010	0.0073	0.07

TOTAL 71.32 1.97 TOTAL-HAPS ONLY

0.9735

YJIJIL 11 = 12.46 SPMT

Xylene-p Gasoline (RVP-11)

> JULY JULY

where Lr = loading loss, \$71000 gat

S = saturation factor, dimensionless, 1.0

7.1355

P = time vapor pressure, psla

M = molecular weight of vapor, With mole

1 - absolute temperature, 'It

Gasolina Throughput, gallons per month =

HAPs	Mole	1.1	Endeslone
Community	_ frestien _ f		11 endnenth) 0.42
Ethylbenzeno	8000	0.0048	0.05
Hoxane	0.0005	0.0674	0 66
l tapidhaleno	A 0000	4.73E-06	4.60E-05
Tohuna	0.0079	0.0627	0.61
Trknethylpenlano (2,2,4)	0.0022	0.0175	0.17
Xylone-ni	0.0014	0.0111	011
Xylene o	9 ODOB	0.0046	0 05
Xylene p	0.0011	0.0087	0.08
Gasoline (RVP-11)	0.0724	7.7148	74.98

TOTAL TOTAL-HAPS ONLY

69.35

see Charl 19438.3 E*3 gallons

şee Chait 4 9692 66,229 611.1

19438.3 E^3 gallons

AUGUST L. = 12.46 SPM/T

AUGUST

AUGUST

where LL = toading loss, tb/1000 gal

S = saturation factor, dimensionless, 1.0

P = litto vapor pressure, psla

M = molecular weight of vapor, lb/lb-mole

T = absolute temperature, 'R

Gasoline Throughput, gallons per month =

۰	ì.	IG	ŧŧ	12	1
м.	٠.		1,	-	1

HAPs	Male	4.1 .	Emissions
Gongounds	Fraction o poss	.((11) 19 (14)) 0 (1422	(Krankuait).
Ethylbenzena	0 0006	0.0046	0.04
Hexane	0 0086	0.0860	0.64
Naghiltalune	0 0000	4.58E-06	4.45E-05
Tokieno	0.0081	0 0622	0.60
Trimethylpaniane (2,2,4)	0.0023	0.0177	0.17
Xylene-m	0.0015	0.0115	0.11
Xylene-o	0.0006	0.0046	0.04
Xylene p	0.0011	0.0084	0.08
Gasoline (RVP-11)	0.9717	7.4608	72.51

TOTAL.
TOTAL-HAPS ONLY

74 62

SEPTEMBER

SEPTEMBER

SEPTEMBER

L. = 12.46 SPM/T

where Li = loading loss, HV (000 gal

S = saturation factor, dimensionless, 1.0 P = true vapor pressure, psta

M = molecular weight of vapor, Ib/Ib mole

T = absolute temperature, 'R

11.8	see Charl
S = see	1.0
₽ =	4 4208
M # 8 88 8	65,194
T #	511.1

Gasoline Throughput, gallons per month =

* 19438,3 E^3 gallon:

SEPTEMBER

IIAPs	Mole	1.1,	Emissions
Compounds	frestien	(let) 1 91 MI)	Herementh.
Benzena	0.0053	0.0372	0.36
Elliylbenzene	0 0005	0 0035	0.03
Hexane	0 0084	0.0590	0.67
Naphthalene	0.0000	4.19E-06	4 07E-05
Takene	0.0084	0.0590	0.57
Frimethylpentane (2,2,4)	0.0021	0.0148	0.14
Xyleno-m	0.0014	0.0098	0.10
Xylene-a	0 0006	0.0042	0.04
Xylane-p	0.0010	0.0070	0.07
Gasolina (RVP-11)	0 9730	6.8362	66.44
TOTAL			event of the en an

TOTAL
TOTAL-HAPS ONLY

1 89

OCTOBER LL # 12.46 SPM/T OCTOBER

OCTOBER

where the adding loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = line vapor pressure, psia

M = molecular weight of vapor, th/to-mole

T = absolute temperature, 'R

Gasoline Throughput, gallons per month =

oc	ī	o	8	E	R

HAPs	Mole	l.s.	Emissions
Compounds	fraction	(Net 19 1 mail) .	(Ten/menth)
Benzena	0.0050	0.0313	6.3b
Ethylbanzana	0,0005	0.0031	0.03
ł fexane	0 0081	0.0507	0.49
laphinulen e	0.0000	3.73E-08	3.626-05
Tokione	0.0072	0.0450	0.44
Trimelhylpeniane (2,2,4)	0.0019	0.0119	0.12
Xylene m	0.0013	0.0081	0.08
Xylene-o	0.0005	0.0031	0.03
Xylene-p	0.0010	0 0063	0.06
Gasoline (RVP-11)	0.9746	6.0978	59.27

TOTAL. TOTAL-HAPS ONLY

NOVEMBER

NOVEMBER

NOVEMBER LL = 12.46 SPMT

where the eleading loss, (b/1000) gat

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psia

M = molecular weight of vapor, lib/lib-mole T = absolute temperature, 'ff

Gasolina Throughput, gallons per month =

٧O١	JEI	413	ÊR

HAPs	Mole	La.	Emissions
<u>Compounds</u>	frastieni	Mb/10 r gal)	(Ten/menth)
Benzena	0.0048	0 0265	0.26
Ethylbenzens	0.0004	0.0022	0,02
licxane	0.0077	0 0426	0.41
Naphthalene	0.0000	3.30E-06	3.20E-05
Tukiène	0.0067	0.0371	0,36
Liknethylpuntana (2,2,4)	0.0016	0.0088	0.09
Xylene-in	0.0012	0.0066	0.06
Xylena-o	0 0005	0.0028	0.03
Xylene-p	0.0009	0.0050	0.05
Gasofine (RVP-11)	0.9762	5.3990	52.47
TOTAL			

TOTAL **TOTAL-HAPS ONLY**

9438.3 E^3 gallons

see Chart 3.4834 65.129 511.1

19438.3 E*3 gallons

DECEMBER

DECEMBER

DECEMBER

LL = 12.46 SPM/T

where LL = loading loss, lb/1000 gat

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psla

M = molecular weight of vapor, ib/ib-mole

T = absolute temperature, *R

Li \$ 640 Chart
S \$ 660 1
B \$ 3.7257
M \$ 65 108
T \$ 511.1

Gasoline Throughput, gallons per month =

DECEMBER

HAPs	Mole	Lı	Emissions
Compounds	Eracilen	/lb/19.1 9af) _	(Negntagnth)
Benzene	0.0048	0.0236	0.23
Ethylbenzene	0.0004	0,0020	0.02
Hexane	0.0075	0.0384	0.37
Naphilialona	0.0000	3,05E-00	2.07E-05
Tokiene	0.0064	0.0328	0.32
Trimethylpentane (2,2,4)	0.0014	0 0072	0 07
Xylene-m	0.0011	0.0058	0.05
Xylone-a	0.0005	0.0026	0 02
Xylene-p	0.0008	0.0041	0.04
Gasofine (RVP-11)	0.9772	5.0031	48.63
Yora:			40.76

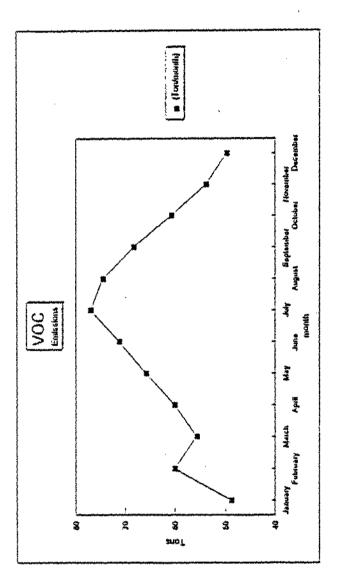
TOTAL.
TOTAL--HAPS ONLY

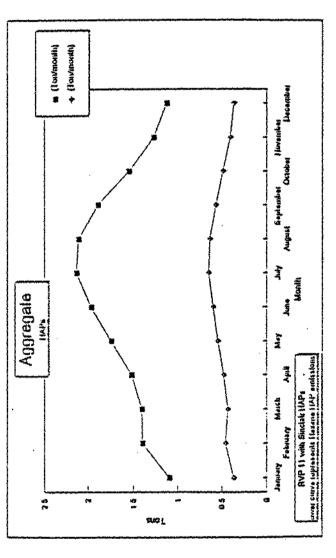
1.13

ANNUAL LOADING RACK EMISSIONS (RVP 11 with Sinclair HAPs)

URIT ANGLES	Aggreg IAP	Single HAI	Single HAP
		iexane Emiss	
(Tenlyr) 746,30		(Ten/yr) 6,05	4 4 4
	1	La	

	VOC	Aggregate	Hexane
	Emissions	HAPs	Emissions
	(Ton/month)	(Tan/month)	(Ton/month)
January	48.86	1.09	0.37
February	60.05	1.40	0.46
March	55.64	1.41	0.43
April	60.17	1.52	0.48
May	65.87	1.75	0.55
huie	71.32	1.97	0.61
hdy	77.12	2.14	0.66
August	74.62	2.11	0.64
September	68.33	1,89	0.57
October	60.82	1.65	0.49
November	53.75	1,28	0.41
December	49.76	1.13	0.37





or ell mouths

TANK IDENTIFICATION AND PHYSICAL CHARACTERISTICS

RUP 11. WI SINCLAIR HATE.

Identification
Identification No.: 401 RVP 11
Identification No.: 401 RVP 11
City: Boise
State: Boise
State: Boise
Type of Tank: External floating Roof
Tank Diameter (ft): 60
Voltane(galions): 639400
Lurbovers: 69

Paint Character Istics
Shell Condition: Light Rust
Shelf Color/Shade: White/White
Shelf Paint Condition: Good

Roof Characteristics
Roof type:
Roof type:
Fitting Category: Typicat
Tank Construction and Riar-Seat System
Construction;, Neided

Rigimanical Shoe Rigimanical

Secondary Seal:

Primary Scal:

Noof fitting/Status

Vactor Breaker (10-in. Diam. Well)/Helghted Mach. Actuation, Gask.

Unsiotted Guilde-Pole Well/Hhyasketed Siding Gover

Roof teg (3-in. Diameter)/Adjustable, Dushiu-Dack Roofs

Roof teg (3-in. Diameter)/Adjustable, Actuation, Gask.

Rim Vent (6-in. Diameter)/Melghted Mach. Actuation, Gask.

Gaugo-Hatch/Sumple Vell (8-in. Diam.)/Unbolted Cover, Ungask.

Access Hutch (24-in. Diam.)/Unbolted Cover, Ungask.

Meteorological Data Used in Emission Calculations: Boise, Idaho

140.44

TANKS PROGRAM 2.0 EMISSIONS REPORT - DETAIL FORMAT LIQUID CONTENTS OF STORAGE TANK

Hixture/Component	Honth	Daily Temper Avg.	atures	(deg f)	Liquid Bulk Temp. (deg f)	•	ressures Min.	(psia) Hax.		l iquid Hass Fract.	Hass	Hol. Velght	Basis for Vapor Pressure Catcutations
Gasoline RVP 11	HAL	42.41	39.23	45.60	51.12	3.1679	H/A	H/A	65.103				•
Gasoline - Unicaded (RVP 11)					,	3.9791	H/A	H/A		0.7043	0.9775	64.70	Option 4: AVP=11.00, ASTH Stope=2.5
Benzene						0.7021	N/A	H/A					Option 2: A=6.9050, B=1211.033, C=220.790
Ethylbenzene						0.0573	H/A	H/A		0.0207	0.0004	106.17	7 Option 2: A=6.9750, B=1424.255, C=213.210
liexame (-n)						1.1875	N/A	N/A					Option 2: A=6.8760, B=1171.170, C=224.410
i sooc i ane						0.2550	#/A	H/A					2 Option 1
Naghthalana C-10, 11-8						0.0010	N/A	N/A		0.0013	0.0000	128,14	6 Option 2: A=7.1463, 8=1831.571, C=211.821
Yalnene						0.1864	H/A	H/A					Option 2: A=6.9540, B=1344.800, C=219.480
Xylene (-m) Xylene (-m)						0.0368	N/A N/A	H/A #/A			0.0011 A AAAA	100.11	7 Option 2: A=7.0090, B=1426.266, C=215.110 7 Option 2: A=6.9980, B=1474.679, C=213.690
Xylene (-p) "Paraxylene"						0.0515	#/A				0.0008		6 Option 2: A=7.0206. B=1474.403, C=217.773
								***		G. 1044B	0,000	1	a children to tention and animal ampriles
Gasotine RVP 11	FEO	45.64	41.69	49.59	51.12	3.3892	; N/A	N/A	65.122				
Gusoline - Unicaded (RVP 11)						4.2544	N/A			0.7043	0.9766	44.70	Option 4: RVP=11.00, ASTH Slope=2.5
Benzene						0.7734	N/A	H/A					Option 2: A=6.9050, 8=1211.033, C=220.790
Ethylbenzene						0.0647	H/A	H/A		0.0207	0.0004	106.17	7 Option 2: A=6.9750, B=1424.255, C=213.210
Nuxana (-n)						1.3001	H/A	H/A		0.0181	0.0077	86.17	Option 2: A=6.8760, B=1171.170, C=224.410
lsoctans						0.3111	H/A						2 Option 1
Najdithalema 6-10, N-8						0.0012	H/A						6 Option 2: A=7.1463, B=1831.571, C=211.821
Taltione Yelena temb						0.20/8	R/A	-					Option 2: A=6.9540, B=1344.800, C=219.480
Xylene (-m) Xylene (-o)						0.0777	H/A						7 Option 2: A=7.0090, B=1426.266, C=215.110
Xylene ("p) "Paraxylene"						0.0417	H/A						7 Option 2: A=6.9980, B=1474.679, C=213.690
whitele falls and exhibit.						1000	H/A	H/A		U.8440	0.0000	140.10	6 Option 2: A=7.0206, B=1474.403, C=217.773
Gasatten RVP 11	HAR	48.57	43.26	53,69	51.12		N/A	H/A	65.138				
Gasotine - Unitended (RVP 11)						4.5178	H/A	N/A		0.7043	0.9758	64,70	Option 4: RVP=11.00, ASIH Slope=2.5
Berriese						0,8432	H/A			0.0188	0.0049	74.11	Option 2: A=6.9050, #=1211.033, C=220.790
Ethylbenzene						0.0721	H/A			0.0207	0.0005	106.17	7 Option 2: A=6.9750, B=1424.255, C=213.210
Hexados (*11)						1.4099	N/A			0.0181	0.0078	86.17	Option 2: A=6.8760, B=1171.170, C=224.410
lsooctane Maphthalene C·10, N·8						0.3622	K/A	•					2 Option 1
Toluena						0.0014 0.2290	N/A			0.0013	0.0000	168.16	6 Option 2: A=7.1463, B=1831.571, C=211.821
Xylene (-m)						0.0865	H/A			U.0716	0,0000	YE, 13	Option 2: A=6.9540, B=1344.800, C=219.480
Xylene (-o)						0.0466	H/A			U,U14G G G1/G	0.0012	100.11	7 Option 2: A=7.0090, B=1426.266, C=215.110
Xylama (-p) "Paraxylene"						0.0448	N/A N/A	-		ው የየነው ተለያው ህ	0.0002 0000	100.14	7 Option 2: A=6.9980, B=1474.679, C=213.690
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -							H/A	#/^		U, U14A	u.uuy	too. It	6 Option 2: A=7.0206, B=1474.403, C=217.773
Gasolina RVP 11	APR	52.46	45.90	59.63	51.12	3.8986	, H/A	N/A	65,160	•			•
Gasoline - Unleaded (RVP 11)					•	4.8873				0.7043	0.9747	64.70	Option 4: RVP=11.00, ASTH Stope=2.5
Benzene		-				0.9440	N/A			0.0188	0.0050	78.11	Option 2: A=6.9050, B=1211.033, C=220.790
Ethylbenzene						0.0831	N/A	-		0.0207	0.0005	106.17	7 Option 2: A=6.9750, B=1424.255, C=213.210
Hexane (-n)						1.5673	H/A	H/A		0.0181	0.0080	86.17	Option 2: A=6.6760, B=1171.170, C=224.410

TANKS PROGRAM 2.0 ENISSIONS REPORT - DETAIL FORMAT LIQUID CONTENTS OF STORAGE TANK, CONT.

Mixture/Component	Honth	Paily Liquic Yemperatures Avg. Hin.	(deg f)	Liquid Bulk Temp. (deg f)	Vapor Pr Avg.	essures Hin.	(psia) Hax.	Vapor Hol. Weight	Liquid Mass Fract.	Hase	Mol. Velght	Basis for Vapor Pressure Calculations
Isocciane					8.4345	H/A	H/A		0.0151	0.0019	114.22	Option 1
Naghthalene C-10, 11-8			•		0.0017	H/A	H/A		0.0013	0.0000	128,16	Option 2: A=7.1463, 8=1831.571, C=211.821
lotuene					0.2600	W/A	H/A		0.0972	0.0072	92.13	Option 2: A=6.9540, B=1344.800, C=219.480
Xylene (*m)					0.0995	N/A	#/A		0.0448	0.0013	106.17	Option 2: A=7.0090, B=1426.266, C=215.110
Xylene (-o) Xylene (-p) "Paraxylene"					0.0539	N/A	N/A					Option 2: A=6.9980, B=1474.679, C=213.690
whitene faht attituden.					0.0746	H/A	H/A		U.0448	0,0009	106.16	Option 2: A=7.0206, 8=1474.403, C=217.773
Gasotine RVP	HAY	56.94 49.41	64.47	51.12	4.2652 /	N/A	N/A	65,185				
Gasoline - Unleaded (RVP 11)					5.3421	N/A	H/A		0.7043	0.9735	64.70	Option 4: RVP=11.00, ASTH Slope=2.5
Benzene					1.0722	H/A	H/A		0.0188	0.0052	78.11	Option 2: A=4.9050, 8=1211.033, C=220.790
Ethylbenzena					0.0975	¥/A	H/A		0.0207	0.0005	104.17	Option 2: A=6.9750, B=1424.255, C=213.210
Hexane (-n)					1.7660	H/A	H/A		0.0161	0.0083	86.17	Option 2: A=6.8760, B=1171.170, C=224.410
leooctene					0.5209	¥/A	N/A		0.0151	0.0020	114.22	Option 1
Haphthalene C-10, H-8					0.0021	N/A	N/A		0.0013	0.0000	128.16	Option 2: A=7.1463, B=1831.571, C=211.821
Toluene					0.2999	#/A	N/A		0.0972	0.0075	92.13	Option 2: A=6.9540, 8=1344.800, C=219.480
Xylene (-m)					0.1165	¥/A	N/A		0.0448	0.0014	106.17	Option 2: A=7.0090, 8=1426.266, C=215.110
Xylena (-o)					0.0634	H/A	N/A		0.0349	8000.0	106.17	Option 2: A=6.9980, B=1474.679, C=213.690
Xylene (-p) "Paraxylene"					0.0874	H/A	N/A			0.0010	106, 16	Option 2: A=7.0206, B=1474.403, C=217.773
Gasotine RVP 11	JUH	60.89 52.92	68.86	51.12	4.6111	H/A	N/A	65.206				
Gasoline - Untended (RVP 11)					5.7708	H/A	N/A		0.7043	0.9724	44.70	Option 4: RVP*11.00, ASTH Slope*2.5
Benzene ,					1.1969	H/A	H/A		0.0188	0.0054	78.11	Option 2: A=6.9050, B=1211.033, C=220.790
Ethylbenzene					0.1119	H/A	H/A		0.0207	0.0004	106.17	Option 2: A=6.9750, 8=1424.255, C=213.210
liexane (-n) .					1.9580	H/A	H/A		0.0181	0.0085	86.17	Option 2: A=6.8760, B=1171,170, C=224.410
fsooctana					8008.0	N/A	N/A		0.0151	0.0022	114.22	Option 1
Raphthalene C-10, N-8					0.0025	N/A	H/A		0.0013	0,0000	128.16	Option 2: A=7.1463, B=1831.571, C=211.821
foluene					0.3394	N/A	N/A		0.0972	0.0079	92.13	Option 2: A=6.9540, B=1344.800, C=219.480
Xylone (-m)					0.1334	H/A	H/A		0.0448	0.0014	106.17	Option 2: A=7.0090, B=1426.266, C=215.110
Xylene ("o)					0.0734	H/A	H/A		0.0349	0.0004	106,17	Option 2: A=6.9980, B=1474.679, C=213.690
Xylena (-p) "Paraxylene"					0.1001	H/A	H/A		0.0448	0.0011	106.16	Oprion 2: A=7.0206, B=1474.403, C=217.773
Gaseline RVP 11	JUL.	64.94 56.05	73.82	51.12	4.9892	N/A	N/A	65.229				
Gasoline - Unteaded (RVP 11)					6,2389	H/A	H/A		0.7043	0.9713	64.70	Option 4: RVP=11.00, ASTH Slope=2.5
Benzena					1.3371	H/A	N/A		0.0188	0.0056	78.11	Option 2: A=6.9050, B=1211.033, C=220.790
Ethythenzene					0.1286	H/A	H/A		0.0207	0.0004	106.17	Option 2: A=6.9750, B=1424.255, C=213.210
Hexaue (-v)					2.1725	N/A	N/A		0.0181	0.0087	86.17	Option 2: A=6.8760, 8=1171,170, C=224,410
soctane					0.6945	H/A	H/A		0.0151	0.0023	114.22	Option 1
Naphthalena C-10, N-8					0.0030	R/A	H/A		0.0013	0,0000	124,16	Option 2: A=7.1463, B=1831.571, C=211.821
Tolsteria					.0.3843	N/A	H/A		0.09/2	1800.0	92.13	Option 2: A=6.9540, B=1344.800, C=219.480
Xýtena (-m) Xvimos (-s)					0.1530	H/A	N/A		0.0448	0.0015	106, 17	Option 2: A=7.0090, B=1426.266, C=215.110
Xylene (-o)					0.0847	N/A	H/A		0.0349	0.0007	106,17	Option 2: A=6.9980, B=1474.679, C=213.690
Xyleno (-p) "Paraxylena"					0.1152	¥/A	N/A		0.0448	0.0011	106,16	Option 2: A=7.0206, B=1474.403, C=217.773

TANKS PHOGRAM 2.0 EMISSIONS REPORT # DETAIL FORMAT LIQUID CONTENTS OF STORAGE TANK, CONT.

Hixture/Component	Honth			(deg f)	Liquid Bulk Temp. (deg f)	Vapor (Pressures Hin.	(psia) Hux.		Liquid Mass Fract.	Hass	Hol. Velght	Basis (or Calculati	Vapor Pressure ons
Gasoline RVP 11	AUG	63.26	55.14	71.38	51.12	4.8293	, N/A	N/A	65,219					
Gasotine - Unleaded (RVP 11)					,	6.0411	N/A	N/A		0.7043	6.9717	64.70	Option 4:	RVP=11.00, ASTH Slope=2.5
Benzene						1.2774		N/A		0.0188	0.0055	78.11	Option 2:	A=6.9050, B=1211.033, C=220.790
Ethylbenzene						0.1215	*	H/A		0.0207	0.0006	106.17	Option 2:	A=6.9750, B=1424.255, C=213.210
Hexana (-11)						2.0813		H/A		0.0181	0.0086	86.17	Option 2:	A=6.8760, B=1171.170, C=224.410
Isooctane						0.6555	*-*	H/A					Option 1	
Naphthalene C-10, H-8 Totume						0.0028		H/A		0.0011	0.0000	128.16	Option 2:	A=7.1463, B=1831.571, C=211.821
Xyterie (-#)						0.3651		H/A H/A		0.0416	0.0061	92.13	option 2;	A=6.9540, B=1344.800, C=219.480
Xylene (-o)						0.0798		#/A		0.0446	1400.00 AAAAA	100.17	the soliton 3:	A=7.0090, H=1426.266, C=215.110 A=6.9980, H=1474.679, C=213.690
Xylene (-p) "Paraxylene"						0.1088				0.0247	0.0000	104.11	notion 2:	A=7.0206, B=1474.403, C=217.773
						-,,	****	. **, **		-,-,-	a.uatt	100.10	alseren er	Walintan Balanda materia
Gasoline RVP 11	SEP	58.75	51.48	66.02	51.12	4,4208	: N/A	#/A	65.194					
Gasoline - Unleaded (RVP 11)						5.5350		H/A		0.7043	0.9730	64.70	Option 4:	RVP=11.00, ASTM Slope=2.5
Benzena						1.1278	H/A	H/A						A=6.9050, B=1211.033, C=220.790
Ethylbenzene						0, 1039		H/A		0.0207	0.0005	106.17	Option 2:	A=6.9750, B=1424.255, C=213.210
Hexane (-A)						1.8518		H/A		0.0181	0.0084	84.17	Option 2:	A=6.8760, B=1171.170, C=224.410
teoctane						0.5558	*-* *-	H/A					Option 1	** ***
Haphthelene C-10, H-8 Toluene						0.0023		H/A		0.0013	0.0000	128.10	Option 2:	A=7.1463, B=1831.571, C=211.821
Xylena (*m)						0.1240		A/K A/K						A=6.9540, B=1344.800, C=219.480
Xylene (-o)						0.0679				0.0770	AAAA A	104.17	f Action 2:	A=7.0090, B=1426.266, C=215.110 A=6.9980, B=1474.679, C=213.690
Xylene (-p) "Paraxylene"						0.0931				0.0448	0.0010	104.16	Option 2:	A=7.0206, B=1474.403, C=217.773
		.									-110		, oder 12012 #12	time toward mastes that a master a
Gaseline RVP 11	oct	52,97	47.03	58.91	51.12	3.9387			65.163				_	
Gasaline - Unicaded (RVP 11) Benzene						4,9369 0,9578		N/A			0,9746	64.70	Option 4:	RVP=11.00, ASTH Slope=2.5
Ethylbenzene						0.0846	,			0.0188	0.0050	/0.11	Option 2:	A=6.9050, B=1211.033, C=220.790
licating (*n)						1.5887		#/A #/A		0.8681	C0000.0	1110.16	opeion zi	A=6.9750, B=1424.255, C=213.210
Isoctane						0.4443		#/A		0.0101	0,000 t	11/ 27	option t	A=6.8760, 8=1171.170, C=224.410
Haghthelene C-10, H-8						0.0017				0.0011	0.0017	128 14	inpriori	A=7.1463, B=1831.571, C=211.821
Totales						0.2642		H/A		0.0972	0.0072	92.13	Outlon 2:	A=6.9540, B=1344.800, C=219.480
Xyieno (-m)						0.1013				0.0448	0.0013	106.17	Option 2:	A=7.0090, 8=1426.266, C=215.110
Xylene (-o)						0.0550	N/A	A/H		0.0349	0.0005	106.17	Option 21	A=6.9980, B=1474.679, C=213.690
XAfene (-b) shataxAfenes						0.0759	N/A	N/A		0.0448	0.0010	106.16	Option 2:	A=7.0206, B=1474.403, C=217.773
Gasotine RVP 11	NOA	46.94	42.88	51.04	51.12	3.4834	H/A	N/A	65.129					·
Gusoline - Unleaded (RVP 11)					•	4.3714		-		0.7043	0.9762	64.70	Option 4:	RVP=11.00, ASTH Stope=2.5
Benzeno						0.8042	H/A	H/A		0.0188	0.0048	78.11	Option 2:	A=6.9050, B=1211.033, C=220.790
Ethylbenzene						0.0679	***	H/A		0.0207	0.0004	106,17	Option 2:	A=6.9750, B=1424.255, C=213.210
Hexane (-n)						1.3486	H/A	N/A		0.0181	0.0077	86.17	Option 2:	A=6.8760, B=1171.170, G=224.410

LIQUID CONTENTS OF STORAGE TANK, CONT.

Mixture/Component	Honth	Daity Liqu Temperatur Avg. Min	es (dag f) Temp.			(psia) He		tiquid Mass Fract.	Huse	Mol. Basis for Vapor Pressure Weight Calculations
isooctane Haphthelene C-10, H-8 Toluene Xylene (-m) Xylene (-o) Xylene (-p) "Paraxylene"	,				0.3341 0.0013 0.2171 0.0816 0.0438 0.0610	H/A H/A H/A H/A H/A	H/A H/A H/A H/A H/A		0.0013 0.0972 0.0448 0.0349	0.001& 0.0000 0.0067 0.0012 0.0005 0.0009	92.13 Option 2: A=6.9540, 8=1344.800, C=219.480 106.17 Option 2: A=7.0090, 8=1426.266, C=215.110 106.17 Option 2: A=6.9980, 8=1474.679, C=213.690
Gasoline RVP 11 Gasoline - Unleaded (RVP 11) Benzene Ethylbenzene Hexane (-n) Isooctane Haphthalene C-10, H-8 Toluene Xylene (-m) Xylene (-o) Xylene (-p) "Paraxylene"	DEC	43,27 40.	11 46,44	51.12	3,2257 J 4.0510 0.7206 0.0591 1.2167 0.2699 0.0011 0.1919 0.0712 0.0380 0.0532	N/A N/A N/A N/A N/A N/A N/A	H/A	5.108	0.7043 0.0188 0.0207 0.0181 0.0151 0.0013 0.0972 0.0448 0.0349 0.0448	0.0046 0.0004 0.0075 0.0014 0.0000 0.0064 0.0011	86.17 Option 2: A=6.8760, B=1171.170, C=224.410 114.22 Option 1 128.16 Option 2: A=7.1463, B=1831.571, C=211.821 92.13 Option 2: A=6.9540, B=1344.800, C=219.480 106.17 Option 2: A=7.0090, B=1426.266, C=215.110 106.17 Option 2: A=6.9980, B=1474.679, C=213.690

TANKS PROGRAM 2,0 EMISSIONS REPORT - DETAIL FORMAT DETAIL CALCULATIONS (AP-42)

Honth:	January	february	Harch	April	Hay	jine	July	August	September	October	November	Decemb
Rim Seat Losses (tb):	31.5640	38.3478	45.6849	50.1029	52.9255	55.0617	54.5901	53.0748	47.6817	42.0859	36,9337	32.626
Seal factor (the mole/ft yr (mph) n):	0.2000	0.2000	0,2000	0.2000	0.2000	0.2000	0.2000	0.2000	0,2000	0.2000	0.2000	0.200
tikys) beed (syst):	8.0	9.0	10.0	10.0	9,5	9.0	8.4	8.8	8.2	8.3	8.4	8,
Seal-related Wind Speed Exponent:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1,00	1.00	1,00	1.(0.061
Value of Vapor Pressure Function:	0.0696	0.0654	0.0701	0.0769	0.0855	0.0938	0.1033	0.0992	0.0892	0.0778	0.0675	0.061
Vapor Pressure at Daily Average Liquid	* +47001	3.389215	1 (0) (07	7 2004/7	1 215205	4.611056	4.989156	4.829343	4.420750	3.938654	3,483379	3.22566
Surface Temperature (psia): Tank Diameter (ft):	3.167891 60	3.30YE13 60	3.601107 60	3,898647 60	4.265205 60	4.6116.6	03 03	4,067343	4.42920	3.730034	06	3,22,300
	65.103257	65.121906	65,138354	65,160120	65.184702	65,206125	65.228744	65,219434	65.194406	65.162934	45.129370	65.10026
Vapor Holecular Weight (tb/lb-mole): Product factor:	0000.1	1.0000	1.0000	1.0000	1,0000	1,0000	1.0000	1.0000	1,0000	1,0000	1,0000	1.000
Fronter factor:	1,0000	1.0000	1,0000	1.0000	1,0000	1.0000	1.0000	1.0000	1.0000	1,0000	1.0000	1,
Withdraual tosses (1b):	14.9706	14.9706	14.9706	14.9706	14.9706	14.9706	14.9706	14,9706	14.9706	14.9706	14.9706	14.970
Het Throughput (gal/month):	4854530	4854530	4854530	4854530	4854530	4854530	4854530	4854530	4854530	4854530	4854530	485453
Shell Clingage factor (bbl/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.001
Average Organic tiquid Density (lb/gal):	0.0000	0.0000	0.000	0.0000	0.0000	0.0000	0.0000	0,0000	0.0000	0.0000	0.0000	0.000
Tank Diameter (ft):	03	60	60	60	60	60	60	60	60	60	60	6 I
,												
Roof fitting tosses (tb):	232,2319	283.7999	340.0241	372.9062	392.8066	407.4941	417.3458	390.9604	351,2336	310, 1965	272.3822	240,149;
Value of Vapor Pressure function:	0.0606	0.0654	0.0701	0.0769	0.0855	0.0938	0.1033	0.0992	0.0892	0.0778	0.0675	0.0619
Vapor Holecular Weight (lb/lb-mole):	65.103257	45,121906	65,138354	45.160120	45.184702	45.206125	45.228744	65.219434	65.194406	65.162934	65.129370	65.10828
Product factor:	1.0000	1.0000	1.0000	1.0000	1,0000	1.0000	1.0000	1,0000	1.0000	1,0000	1.0000	1.0000
lot. Roof fitting toss fact. (tb-mole/yr):	706.3198	799.2734	893.1371	893.1371	846.0948	799.2734	743.3885	724.0350	724.8350	734,1070	743,3885	715.5720
Average Wind Speed (n(4):	8.0	9.0	10.0	10.0	9.5	9.0	8.4	8,2	8.2	8.3	8.4	8.
						Loss Facto						
Roof fitting/Status			Que	intity j	(fa (lb-mole	i/γr) Kfb	(lb-mole/()	/r mpirn))	Ħ			
*******************************								4 66				
Vucinin Branker (10-in, Olum, liell)/Weight		tuation, Gas	iK.	1	1.20	0.1	•	1.00				
Unstatted Guide-Pole Well/Ungasketed Slid				.1	0.00	67.00		0.98				
Roof leg (3-in, Diameter)/Adjustable, Doub	ple.Dack Ro	01\$	1	ļo.	0.25	0.0		1.00				
Roof Drain (3-in. Dismeter)/Open				1	0.00	7.00		1.40				
Kim Vent (6-in. Diemeter)/Weighted Mech.				1	0.71	0.10		1.00				
Ganga-Natch/Sampla Well (8-14. Dlam.)/Wal			Gask	1	0.95	0.10	-	1.00				
Gauge-Float Well (20-In, Diam.)/Abbolted		sk.		1	2.30	5.90		1.00				
Access Hatch (24-in. Dism.)/Bolted Cover,	Gaskated			1	0.00	0,0	Ų	00,0				
Total Losses (tb);	278.77	337.12	400.68	437.98	460.70	477.53	488.91	459.01	413.89	367.25	324.29	287.74

TANKS PROGRAM 2.0 EMISSIONS REPORT T DETAIL FORMAT INDIVIDUAL TANK EMISSION TOTALS

Months in Report:

January, February, March, April, May, June, July, August,

September, October, November, December

69869	41	lis.	11

	TORRER (ID)	i. }:			
	Total	*		Total	
Liquid Contents	Withdrawat	Roof-fliting	Rim-Scal	Standing	lotal
Gasoline RVP 11	179.65	4011.53	542.67	4554.20	4733.85
Gasoline - Unicaded (RVP 11)	126.53	3907.97	528.66	4436.63	4563.15
Benzena	3.38	20.49	2.77	23.26	26.64
Ethylbenzano	3.72	2.02	0.27	2.29	4.01
Hexane (-n)	3.25	32.63	4.41	37.04	40.29
Isooctana	2.71	7.63	1.03	8.67	11.38
Naphthalene C-10, H-8	0.23	0.00	0.00	0.00	0.24
Totuene	17.46	29.41	3.98	31.39	50.86
Xylene (-m)	8.05	5.23	0.71	5.94	13.99
Xytene (-o)	6.27	2.22	0.30	2.52	8.79
Xylene (-p) "Paraxylene"	8.05	3.92	0.53	4.45	12.50
Total:	179.65	4011.53	542.67	4554.20	4733.85

170,7 LE COMEMED HAPE D.OBSY TONIYE COME, NED HATE

Title V Engineer:

DM

Company Name:

Sinctair Oil Corp.

Location:

Bolse, Idaho

Date Created: Today's Date: January 4, 1996 01/19/98

Calculation of Loading Rack Emissions

THIS SPREADSHEET IS DESIGNED TO ESTIMATE EMISSIONS BY MONTH

ASSUMPTIONS

1. TANKS2.0 provides the monthly everage true vapor pressure of the gasoline product ANO the molar fraction of HAP constituents in the vapor phase of the gasoline product,

Reference:

AP-42, Sect. 5.2

only january is changed below

JANUARY

JANUARY

JANUARY

11. = 12.46 SPM/T

where Li = loading lose, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, psia

M = motecular weight of vapor, 66 5 lb/lb-mote

T = absolute temperature, 508°R

JANUARY Gasoline Throughput, gallons per month, =

.)	A.	Ν	IJ	A	ı	ľ	١

HAP*	Vapor Mass	l.c	Emissions
Compounds	fraction	(12/19 : 92) 0 0224	_(Tentmenth) 0 22
Ethythorizona	0.0003	0.0018	0.02
Haxana	0.0062	0.0365	0.35
Naphitulona	0.0000	3.51E-06	3.41E-05
Tolijene	0.0052	0.0306	0.30
Frimethylpentane (2,2,4)	0.0011	0 0065	0.06
Xylene-m	0.0009	0.0053	0.05
Xylona-o	0.0004	0.0024	0.02
Xylene-p	0,0007	0.0041	0.04
Gasolina (RVP-13)	0.9814	5.7772	56.15

TOTAL. **TOTAL-HAPS ONLY**

62 354 511,1 19438.3 E^3 gallons **FEBRUARY** LL = 12.46 SPM/T

FEBRUARY

FEBRUARY

where LL = loading loss, #x/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor prossuro, 4.0 psia

M = motecular weight of vapor, 66.5 lb/lb-mote

T = absolute temperature, 508°R

see Chart 4.1361 62.371 511.1 19438.3 E^3 gallons

Annual Gasoline Throughput, gallons per year, =

F				

HAPs	Mole	L	Emissions
Compounds	Fraction	(lb/10 x gal)	_(Mangmenti)_
Benzene	0,0039	0.0245	0.24
Ethylbanzene	0.0004	0.0025	0.02
Hexane	0.0063	0.0398	0.39
Naphthalene	0,0000	3.75E-06	3.64E-05
Toluene	0.0054	0.0340	0.33
Frimethylpentane (2,2,4)	0.0013	0.0082	0.08
Xylene-m	0.0009	0.0057	0.06
Xytene-o	0,0004	0.0025	0.02
Xylana-p	0.0007	0.0044	0.04
Gasoline (RVP-)0)	0.9806	6.1668	69.94

TOTAL

81,12 1.18

TOTAL-HAPS ONLY

MARCH

MARCH LL = 12.46 SPM/T

where Lr = loading loss, #x/1000 gal

MARCH

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, 4.0 psia

M = molecular weight of vapor, 66.5 lb/lb-mole

T = absolute temperature, 506'R

19436.3 E^3 gallons

62.386

511.1

Annual Gasoline Throughput, gallons per year, =

HAPs	Mole	l.	Emissions
Compounds	Fraction	([6/10 : 02])	(Tenhuenth)
Bonzone	0.0040	0.0267	0.26
Ethylbenzene	0.0004	0.0027	0.03
Hexans	0,0065	0.0434	0.42
Maphihalana	0,0000	3.98E-06	3.87E-05
Tokiene	0.0057	0.0380	0.37
Trimethylpentane (2,2,4)	0.0014	0.0093	0.09
Xylene-m	0.0010	0.0067	0.06
Xylena-o	0.0004	0.0027	0.03
Xylene-p	0.0007	0.0047	0.05
Gasoline (RVP-16)	0.9799	8,5390	63,55
13			
TOTAL		•	64.86

TOTAL-HAPS ONLY

APRIL.	APRIL.		APRIL	
LL = 12.46 SPM/T	where til = load	ling loss, Ib/10	000 gal	Li 🔻 🔆 💮 pee Chart
		*	dimensioniess, 1.0	S = 600
		Asbot hieser		P # 4.7407
		•	of vapor, 66.5 lb/lb-m	ole M # 62.405
	T = abs	okute tempera	tura, 508°R	T 9 1 511.1
Annual Casalina Through	and college acres		•	10420 2 542
Annual Gasoline Through	ни, Вакиз э баг ў	'94I, "		19438.3 E^3 gallons
APRIL				• • • • • • • • • • • • • • • • • • • •
IIAPs	Mole.	Li	Emissions	
Compounds	Fraction	(lb/10 2 gal)_	(Ten/menth)	
Benzene	0.0042	0.0303	0.29	
Ethylbenzene	0.0004	0.0029	0.03]	
Hoxane	0.0067	0.0483	0.47	
Naphihalene	- 0.0000	4.30E-06	4.18E-05	
Tokiene	0 0059	0.0426	0.41	
Trimethylpentane (2,2,4)	0.0015	0.0108	0.11	
Xylene-m	0.0010	0.0072	0.07	
Xylene-o	0.0004	0.0029	0.03	•
Xylane-p	0.0008	0.0058	0.06	
Gasoline (RVP-16)	0.9790	7.0606	68.62	
TOTAL			70.09	
TOTAL-HAPS ONLY		:		
MAY	MAY		MAY	
L # 12.46 SPM/T	where Li = load	ling loss, lb/1	000 gal	L. Tiller See Chart
	S = sau	ration factor.	dimensionless, 1.0	S # 600
		vapor pressi	•	P # 5.1744
			of vapor, 68.5 lb/lb-n	
	ada = T	olule tempera	hire, 508°R	₹ ₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩
		•		
Amual Gasoline Tirough	put, gallons per y	/var, =		19438.3 E^3 gallons
	Mole	Lı	Emissions	
Compounds	Fraction	(Ib/19±gal)_	(Magada)	
Benzene	0.0045	0 0354	0.34	
Ethylbanzene	0.0005	0.0039	0.04	
Hexane	0.0071	0.0559	0.54	•
Naphthalene	0.0000	4 69E-06	4,56£-05	
Tokiene	0.0068	0.0520	0.51	•
Trimethylpentane (2,2,4)	0.0018	0 0142	0.14	
Xylane-m	0.0012	0.0095	0.09	
Xylene o	0.0005	0 0039	0.04	
Xylene-p	0.0009	0.0071	0.07	-
Gasoline (RVP-18)	0.9778	7.7030	74.87	
/3	47.45 3 47	,,,000	1 3.001	
TOTAL	······	······	76 84	

TOTAL TOTAL-HAPS ONLY

JUNE JUNE JUNE Li = 12.48 SPM/T where L. = loading loss, lb/1000 gal S = saturation factor, dimensionless, 1.0 P = true vapor pressure, 4.0 psia M = molecular weight of vapor, 66.5 lb/lb-mole T = absolute temperature, 506*R Annual Gasoline Throughput, gallons per year, = JUNE HAPs Emissions Mole L Fracilen 0.0045 Compounds Benzene

Ethylbanzene 0.0005 0.0042 0.04 0.0071 0.0603 0.59 Hexana 5.06E-06 Naphthalene 0.0000 4.02E-05 0.0066 0.0561 N 65 Toluene 0.0018 0.0153 0.15 Edmolfrylpontano (2,2,4) Xylottu-tit 0.0012 0.0102 0.10 0.0005 0.0042 0.04 A-prodyX 0.0009 0.0076 0.07 Xylana-p Gasolina (RVP,46)* 0.9770 8,3008 80.68 TOTAL. 82.58

JULY

JULY

JULY

1.01

L. = 12.46 SPM/T

TOTAL-HAPS ONLY

where Lt = loading loss, Ib/1000 gat

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, 4 0 psia

M = molecular weight of vapor, 66.5 tb/lb-mole

T = absolute temperature, 506*R

Annual Gasoline Throughput, gallons per year, =

IIAPs	Mole	Lı	Emissions
Compounds	Fraction		(theenheet).
Benzene	0.0046	0.0422	0.41
Ethylbenzene	0,0005	0 0046	0.04
Hexane	0.0073	0.0670	0 65
Naphihalene	0,0000	5.47E-06	5,32E-05
Tokiene	0.0069	0.0633	0 62
Frimethylpantana (2,2,4)	0.0019	0.0174	0.17
Xylene-m	0.0013	0.0119	0.12
Xylene-o	0.0005	0.0046	0.04
Xylene-p	0.0010	0.0092	0.09
(10ر RVP) Gasoline	0,9682	6.8862	66,39
13			

TOTAL **TOTAL-HAPS ONLY**

see Chart

see Chart:

5.5828 62.428

19438.3 E^3 gallons

6.0283 82.468

511.1

19438.3 E^3 gallons

+**.

AUGUST

AUGUST

AUGUST

Li = 12.46 SPM/T

where LL = loading loss, ib/1000 gal

5 = saturation factor, dimensionless, 1.0

P = true vapor pressure, 4.0 psia

M = molecular weight of vapor, 66.5 lb/lb-mole

T = absolute temperature, 506*R

19438.3 E^3 gallons

19438.3 E^3 gallons

Annual Gasoline Throughput, gallons per year, =

AUGUST

IIAPs	Mole	L	Emissions
Compounds	Fraction_	(M) (10 + gal)	(Ten/menth)
Benzene	0.0046	0.0409	0.40
Ethylbenzene	0.0005	0.0044	0.04
l texane	0.0072	0.0640	0.62
Naphthalane	0,0000	5,30E-06	5,15E-05
Tokiena	0.0068	0 0605	0.69
Trimethylpentane (2,2,4)	0.0019	0.0169	0.16
Xylene-m	0.0012	0.0107	0.10
Xylene-o	0.0005	0.0044	0.04
Xylene-p	0.0009	0.0080	0.08
Gasoline (RVP,40)	0.9764	8.6824	84,39
TOTAL.		······································	86 43

TOTAL-HAPS ONLY

2.04

SEPTEMBER

SEPTEMBER

SEPTEMBER

LL = 12.46 SPM/T

where LL * loading loss, ID/1000 gat

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, 4.0 psla

M = molecular weight of vapor, 66.5 lb/lb-mole

T = absolute temperature, 508°R

L 0 | See Chart 5 = 600 | 1 7 = 5.3562 M 7 | 62.437 | 7 | 511.1

Annual Gasoline Throughput, gallons per year, =

SEPTEMBER

HAPs	Mole	1.	Emissions
Compounds	Fracilon	(Ib/10 : gal)	_(Ten/menth)
Benzene	0.0044	0.0359	0.35
Ethylbenzene	0.0004	0.0033	0.03
t lexene	0.0070	0.0571	0.55
enolarliratett	0.0000	4.86E-06	4.72E-05
Tokiona	0.0064	0.0522	0.51
Frimethylpentane (2,2,4)	0.0017	0.0139	0.13
Xylene-m	0.0012	0.0098	0,10
Xylene-o	0.0005	0.0041	0.04
Xylone-p	0.0009	0.0073	0.07
Gasoline (RVP-18)	0.9775	7.8721	77.48
TAYAI			70 27

TOTAL.
TOTAL--HAPS ONLY

79.27

OCTOBER

OCTOBER

OCTOBER

LL # 12,46 SPM/T

where L. = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, 4.0 psla

M = molecular weight of vapor, 66.5 lb/lb-mole

T = absolute temperature, 506°R

S # 600 I P # 4.788 M # 82.408 T # 511.1

19438.3 E^3 gallons

19438,3 E^3 gallons

Annual Gasoline Throughput, gallons per year, =

OCTOBER

IIAPs	Male	L	Emissions
Compounds	fraction		_{[[@m/men]]_
Banzana	0.0042	0.0306	0.30
Ethylbenzona	0.0004	0.0029	0.03
i lexane	0.0067	0 0488	0.47
Naphthalene	0.0000	4.34E-06	4.22E-05
Takiene	0.0060	0.0437	0.42
Trimelhylpentane (2,2,4)	0.0016	0.0117	0.11
Xylana-m	0.0011	0,0080	0.08
Xylena-o	0.0004	0.0029	0.03
Xylene-p	0.0008	0.0058	0.06
Gasoline (RVP-10)	0,9789	7,1306	69,30
TOTAL			70 80

TOTAL TOTAL-HAPS ONLY

1,50

NOVEMBER

NOVEMBER

NOVEMBER

11 = 12.46 SPM/T

where tx = loading loss, lb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, 4.0 psia

M = molecular weight of vapor, 66.5 lb/lb-mole

T = absolute temperature, 508*R

S = see 1 P = 4.248 M = 62.377 T = 511.1

Annual Gasoline Throughput, gallons per year, =

NOVEMBER

IIAPs	Mole	l.i.	Emissions
Compounds	fraction	_(IE/10 ± 0al)_	(Ten/menth
Benzena	0.0040	0.0258	0.25
Ethylbenzene	0,0004	0.0026	0.03
Hexane	0.0064	0.0413	0.40
Naphthalene	0.0000	3.85E-08	3.74E-05
Tokiene	0.0055	0.0355	0,35
Trimethylpentane (2,2,4)	0.0013	0.0084	0.08
Xylene-m	0.0010	0.0065	0.06
Xylena-o	0.0004	0.0026	0.03
Xylene-p	0.0007	0.0045	0.04
Gasoline (RVP-10)	0.9803	6,3323	61.54
/3			,

TOTAL TOTAL-HAPS ONLY

62.78

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D	E	CE	М	3ER
1 .	ш	13	46	COLE

£7.6	 ME	ŒË	
E 2 E	 TV# 5	1 E E 1	i.

DECEMBER

where Lr = loading loss, fb/1000 gal

S = saturation factor, dimensionless, 1.0

P = true vapor pressure, 4.0 psla M = molecular weight of vapor, 66.5 lb/lb-mole

T = absolute temperature, 508 H

lı.≑	5.0	o Charl
S = see		Chart
P =	4	:3.941

19438.3 E'3 gallons

Monthly Gasoline Throughpul [gallons per month], # . .

DECEMBER

HAPs	Mole	l.i.	Emissions
Compounds	fraction	(ILL/ 10 : stat) _	(Ter/menth)
Benzena	0.0038	0.0228	0.22
Ethylbenzeno	0.0003	0.0018	0.02
liexana	0.0062	0.0371	0.36
Haphihaleno	0.0000	3.57E-06	3.47E-05
Tokiene	0.0053	0.0318	0.31
Trimethylpentane (2,2,4)	0.0012	0.0072	0.07
Xylene-m	0.0009	0 0054	0.09
Xylene-o	0.0004	0.0024	0.02
Xylene-p	0.0007	0.0042	0.04
Gasoline (RVP-10)	0.9812	5.8791	57.14

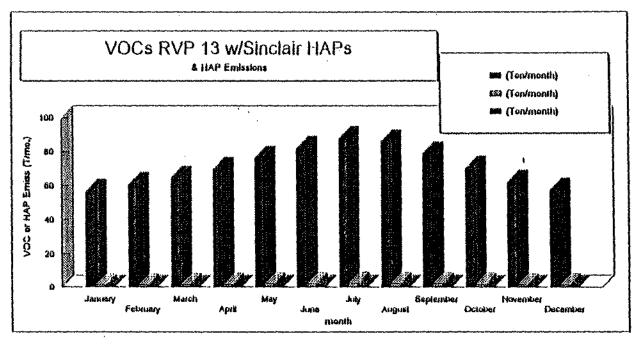
TOTAL

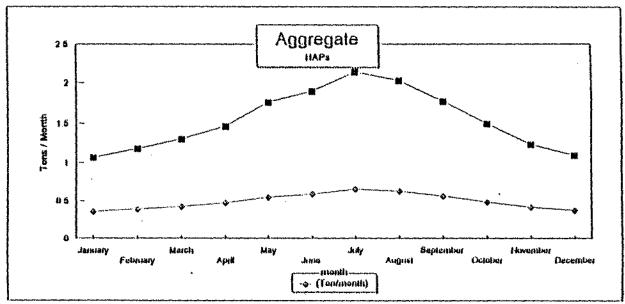
TOTAL-HAPS ONLY

ANNUAL LOADING RACK EMISSIONS (RVP 13 with Sincial HAPs)

		Single HAP	
Emissions	Emissions	liezano Emiss	Tolssene
[iy/naT]	_[You/yr]_	[Youlyi]	(fonlyr)
858.53	18.49	5.83	4.24

	Aggregale	Hexane	VOC
	HAP's	Emissions	Emissions
,	(Tor/month)	(Ton/month)	(Turvmanth)
lanuary	1.06	0.35	57.21
febulary	1.16	0.39	61.12
March	1.30	0 42	64.86
Aşvil	1.47	0.47	70.09
May	1.77	0 54	76.64
line	1.91	0.59	82.58
July	2.14	0.65	88 53
August	2.04	0,62	86,43
September	1,78	0.65	79.27
October	1.50	0.47	70.80
Hovember	1.24	0.40	62.78
Ogganiser		036	59.24





TANK IDENTIFICATION AND PHYBICAL CHARACTERIES

RVP 13 - SINCHAIR HAT COMPOSITION,

			Sincluir Oil Corp	Floating Roof
		Boise	 	_
Lient I I cas lon	Identification No.1	Citys	 Company:	Type of fank:

	60	\$39400	59		1571 H1501
fast blassions	Diameter (fl):	Volume (gallons):	Turnovers:	Paint Characteristics	Shell Cordillon:

Light Rust Unice/Unica Good	Double Deck Typical	Scal System Welded Mechanical Shoe Riaranousted
Shell Condition: Shell Color/Shade: Shell Paint Condition:	Roof Characteristics Roof Type: Fitting Category:	Tank Construction and Rim-Scat System Construction: Welded Primary Soat: Mechanical Sucondary Seal: Rimmonston

West of the second seco	
Roof Fitting/Status	Quantity
Vacuum Breaker (10-in. Diem. Well)/Weighted Bech. Actuation. Gask.	; , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Unstated Gulde-Pala Well/Impasketed Stilling Cover	-
Roof teg (3-in, Diameter)/Adjustable, Dodde Beck Roofs	10
Roof Drain (3-in, Diameter)/Open	
Alla Vent (6-in, Diameter)/Veighted Hech. Actuation, Gask.	
Gauge-Batch/Sasple Vall (8-in, Diam.)/Walghted Mcch. Actuation, Gask	
Sauge Fiont Holl (20-in, Diam.)/Indhaited Cover, Ungask.	
Access flatch (24-in. Dium.)/Bulted Cover, Gasketed	*****

Meteorological Data Used in Emission Calculations: Soiso, Idelio

100

ENIGSIONS REPORT - DETAIL FORMAT

Hixture/Component	Month	Dally Teaper Avg.	Dally Liquid Surf. Feaperatures (deg.	3	ੂ ਹ	Vapor Pressures (psia) Avu. Hin. Hax.	resaures ((psia) Max.	Vapor Moi. Ueiglit	t fquid Hass Fract.	Vapor Hass Fract.	Hol. Kelght	Basis for Va	Basis for Vapor Pressure	# 11784	\$ \$ \$ \$ \$	7 4 8 8
dasoline RVP 13 with Sinctair Benzene Ethylbenzene Gasolina (RVP 13) Haxane (-n) Isoctane Nephinalene C-10, H-8 Yolene (-n) Xylene (-n) Xylene (-p) "Paraxylene"	NY	42.41	42.41 39.23 45.60		51.12.	3.8727\$ 0.7021 0.0573 4.6370 1.1875 0.2550 0.0600 0.0690 0.0515	***************************************	**************************************	62,354	0.0188 0.0207 0.7043 0.0181 0.0151 0.0972 0.0948 0.0349	6.0038 6.0003 6.9814 6.0062 6.0000 6.0000 6.0009 6.0009	78.11 106.17 62.00 86.17 114.22 128.16 92.15 106.17	Option 2; Option 2; Option 4; Option 4; Option 2; Option 2; Option 2; Option 2; Option 2; Option 2; Option 2;	1	A=6.9050, B=1211.033, C=220.790 A=6.9750, B=1424.255, C=213.210 RVP=13.00, ASIM Slope=2.5 A=6.8760, B=1171.170, C=224.410 A=7.1463, B=1831.571, C=211.821 A=6.9960, B=1426.266, C=219.480 A=6.9960, B=1474.469, C=213.490 A=7.0206, B=1474.4679, C=213.690	33, C=220.790 55, C=213.210 ope=2.5 70, C=224.410 71, C=219.460 66, C=215.110 79, C=213.690	6=220.790 6=213.210 2.5 6=224.410 6=219.480 6=219.480 6=219.480
Gasofine RVP 13 with Sixciair Benzena Ethylbenzena Gasofine (RVP 13) Hexana (-n) Hexana (-n) Hooctana Naphthalena C-10, H-8 Idiuena Xylena (-n) Xylena (-n) Xylena (-p) "Paraxylene"	## ##	45.64	41.69 49.59		. 21.12	6.734 6.0647 6.0647 5.1633 1.3001 6.3111 6.2028 6.2028 6.0777 6.0561	**************************************	**************************************	H/A 62.371 H/A H/A H/A H/A H/A	0.0188 0.0207 0.0207 0.0181 0.0181 0.0181 0.0013 0.0488 0.0488	6,0039 0,0004 6,9806 0,0063 0,0003 0,0009 0,0009 0,0009	78.11 106.17 106.17 114.22 114.22 114.22 106.17 106.17	78.11 Option 2: 106.17 Option 2: 22.00 Option 4: 26.17 Option 2: 114.22 Option 2: 128.16 Option 2: 106.17 Option 2: 106.17 Option 2: 106.17 Option 2:		A=6.9050, B=1211.033, C=220.790 A=6.9750, B=1424.255, C=213.210 RVP=13.00, ASIM Stope=2.5 A=6.8760, B=1171.170, C=224.410 A=7.1463, B=1831.571, C=211.821 A=6.9540, B=1426.266, C=219.460 A=7.9980, B=1424.479, C=213.410 A=7.9206, B=1474.479, C=213.490	33, C=220 55, C=213 70, C=211 71, C=211 79, C=211 03, C=211	C=220.790 C=213.210 2.5 C=224.410 C=211.821 C=215.110 C=213.490 C=217.773
Gasoline RVP 13 with Sinciair Benzena Eihylbenzena Gasoline (RVP 13) Hexana (-A) Lucoctana Maphthalena C-10, H-6 Noluena Nylena (-A) Nylena (-A) Nylena (-D) Nylena (-D)	HAR R	18.57	48.57 43.26 53.89	93.89	24 11 15	4,3676 0,6432 0,6432 1,4099 0,3622 0,0014 0,2290 0,0668 0,0468	**********		H/A 62.386 H/A H/A H/A H/A H/A H/A	0.0188 0.0207 0.0207 0.0181 0.0181 0.0972 0.0349	0.0040 0.0004 0.9799 0.0004 0.0004 0.0004 0.0004 0.0004	76,11 106,17 62,00 86,17 116,22 126,16 92,13 106,17	78.11 Opt lan 2: 106.17 Opt lan 2: 62.00 Opt lan 4: 86.17 Opt lan 2: 114.22 Opt lan 1: 128.16 Opt lan 2: 92.13 Opt lan 2: 106.17 Opt lan 2: 106.16 Opt lan 2:	2: A=6.9050, 4: RVP=13.00, 2: A=6.9750, 2: A=6.8760, 1 2: A=7.1463, 2: A=7.0090, 2: A=6.9960, 2: A=7.0090, 2: A=7.0090, 2: A=7.0090,	A=6.9050, B=1211.033, C=220.790 A=6.9750, B=1424.255, C=213.210 A=6.8750, B=1171.170, C=224.410 A=7.1463, B=1831.571, C=211.821 A=6.9540, B=1344.800, C=219.480 A=7.0090, B=1444.600, C=219.480 A=7.0206, B=1474.679, C=213.490	33, C=220 55, C=213 70, C=22 71, C=21 66, C=21 03, C=21 03, C=21	C=220.790 C=213.210 c=224.410 C=211.621 C=219.460 C=215.110 C=217.773
Gasoline AVP 13 with Sincleif Benzene Ethylbenzene Gasoline (AVP 13)	AP &	52.46	45.90	59.03	۲. ۲.	4.740万数 0.9440 0.0831 5.9114 1.5673	*****	****	H/A 62.405 H/A H/A H/A H/A	0.0188 0.0207 0.7043 0.0181	0.0042 0.0004 0.9790 0.0067	78.11 106.17 62.00 86.17	option 2 Option 2 Option 4 Option 2	Option 2: A=6.9050, B=1211.033, C=220.790 Option 2: A=6.9750, B=1424.255, C=213.210 Option 4: RVP=13.00, ASTM Siope=2.5 Option 2: A=6.8760, B=1171.170, C=224.410	B=1211.0 B=1424.2 O, ASTM SI	33, c=22 55, c=21 996=2.5 70, c=22	C*220.790 C*213.210 *2.5 C*224.410

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		Dailty	Daily Liquid Surf.	Surf.	Liquid Bulk				Vapor	Liquid	Vapor						•
Hixtura/Conyonant	Nonth	Temper Avg.	lemperatures (deg Avg. Min. Hax.	(deg f) Hax.	Cdey f)		Vapor Pressures (psia) Avg. Mín. Hax.	(ps la) Hux.	Hal. Velght	Hass Fract.	Hass Fract.		asis for alculati	Basis for Vapor Pressure Calculations	fessufe	-	
Isooctane						0.4345	N/A	Y/#	; ; ; ;	0.0151	0.0015	114.22 0	Option 1	: : : : : :	; ; ; ; ; ;	* * *	; ; ;
Repailmetens C-10, H-6						0.0017	¥/¥	-		0.0013	0.0000		Option 2:	: A=7.146	3, 8=1831.571,		211.821
						0.2600	¥/¥			0.0972	0.0059	92.13 ag	Option 21	1 A=6.9540,	0, 8=1344.800,		C+219.480
XY1#1G (*@)						0.0995	#/¥			0.0448	0.00.0			, A=7.0090,	0, 8=1426.266,		C=215.110
Ayterie ("D)						0.0539	H/A			0.0349	0.0004	106.17 OJ	Option 2:	1 A=6.998	0, 8=1474,679,		213,690
Xylens ('p) "Faraxylens"						0.0744	¥\	#/¥		8770.0	0,0008	106.16 0	Option 21	1 A#7.0206,	6, 8=1474.403,		C=217.773
Gasotine RVP 13 with Sinclair	HAY	56.95	17 67 76 79	27.43	51.12	5. 1744 A	177	7	RC7 C9								
Benzena			•			1.0722		***		6.01BB	0.0043	78 11 0	Our ton 2,		0.1311	0.7 %	Ce220 700
Ethyltrenzene						0.0975	**			0.0207	0.0004	-			12-2 /270:14-14-14 /2700 YET	755	F=213 210
Gasulina (HVP 13)						6.4476	#/#			0.7043	0.9779		Out less 4:		OO ASIH S	lone=2	
Headine ('n)						1.7660	N/A			0.0181	0.0069				A=6.8760 8=1171 170 C=224 L10	170 CE	017 766
Succt and						0.5209	#/#	V/N		0.0151	0.0017					•	
Naphithalone C-10, 11-8						0.0021	×/×			0.0013	0.000				1 A.1811 571		Ca211 821
Tolucia						0.2999	1/W			0.0972	0.0063	92 13 0		0750 Y## 1	0 Re1366 ADD		C=210 680
Xylene (-m)						0.1165	*/*			W770 0	0001				**************************************		215 450
Xylene (.o)						A5 A6 0	£ / #			0720	0.000	20.44			0 0-1/20.500,		L-613.130
Iviera (-D) "Paravient						74000	* *			450.0	******************	11.00					0,40.413-7
And the same of th						* / co . c	K/X	#/¥		U. U. 40	0.0000		17 Wollich	: A=/.0206,	o, 8×14/4.405,		C=217.773
Gasoline RVP 13 with Sinclair	#	68 89	\$2.02	AH HA	\$ 61.15	S. Shakill	177	47.41	211 67								
Den sente					4	1040	-	* :	06.116	6070	9500						
404 M C 4 M						1,1707	* /*			20.00	0.0045				A=6.9050, 8=1211.033,		C=220.790
Secretary and the second second							¥/#			0.uce/	0.0005				0, B=1424.		C=213.210
						7.00	¥/#	_		0.7045	0.9770				RVP=13.00, ASIN \$1ope=2.5	lopen2.	'n
						1.9580	¥/¥			0.0181	0.0071		Option 2:		A=6.8760, 8=1171.170,	±20, C±	C=224.410
sooct ane						0.6006	#/ #	_		0.0(5)	0.0010				•		
Nephillalene C-10, 11-5						0.0025	₩/₩	4/#		0.0013	0.0000		Option 2:				211.021
Toluene						0.3394	××			0.0972	0.0066						C#219.480
Xylene (-m)						0.1334	H/A			0.0448	0.0012	•					C=215, 110
Xy(ene (-o)						0.0734	H/A			0.0349	0.0005			_			10 Y 11 C#3
Xylene (-p) "Paraxylene"						0.1003	#/X	_		0,0448	0.0009	106.16 0		_			C=217.773
Gasoline RVP 13 with Sincialr	#	76 79	SV 98	24 82		A noaria	***	7,2	977 67							ı	
Battlene	İ					1177	- "	*	D5.,100	4440	,,,,,,					1	
Fibrilian						126.				0.0100	0.00%		Upition Z:		A=6.9050, B=1211.055, C=220.790	032° C	220.790
						0021.0	× :			8.UZU/	0.0003		Option 2:		0, 8**14.24.	255, C=	213.210
÷						7.5016	∀ /#			0.7043	0.9760		Option 4:		OO, ASIN S	tope "2.	-
Hexanu ('n)						2.1725	#/¥	_		0.0181	0.0073	86.17 0			A=6.8760 8=1171 170 C=224 410	17a C.	017 722
#00ct #0#						0.6945	M/A			0.0151						*	
Majdithalene C-10, H-8						0.0030	¥/#			0.0013				FA51 Tat .	¥ 8=18% 1	4.71 C.	316 934
Tolueno					•	0.3843	*/*			0.0072		2 11 6			0 p-12// por		138.1.47.
Xylene (-m)						0.1530	***			8770 0							127.400
Xviene (-o)						0.0847				0.07	1000			, very .	007 0741 # 2 10		27.10
Xviens (-0) Aparaxolones						1965	£ :	¥/#		4.00.00 V	0.0003			A ** 5. 975U	U. H=1474.679,		213.690
						¥	₹	¥/#		5.5	e'.	100.36 GF	Option 2s		5, B=1474.403,		C=217.773

TANKE PROGRAM 2,0 EMISSIONS REPORT - DETAIL FORMAT LIQUID CONTENTS OF STORAGE TANK, CONT,

Hixtur#/Component	Honth			(deg f)	Liquid Bulk Temp. (deg f)	Vapor Pras Avg. Ni	isures n.	(psia) Hax.		tiquid Mass fract.	Haus	Hol, Veight	Basis for Vapor Pressure t Calculations
Gasoline RVP 13 with Sinclair	AUG	63,26	55.14	71.38	51.12 /	5.8401)	N/A	H/A	62.459				,
Benzene						1.2774	H/A			0.0188	0.0046	78.11	Option 2: A=6.9050, 8=1211.033, C=220.790
Ethylbenzene						0.1215	H/A	H/A		0.0207	0.0005	106.17	7 Option 2: A=6.9750, B=1424.255, C=213.210
Gaseline (RVP 13)						7.2695	N/A	H/A		0.7043	0.9764	62,00	Option 4: RVP=13.00, ASTM Slope=2.5
ilexane (-n) Iscoctane						2.0813	H/A			0.0181	0.0072	86.17	Option 2: A=6.8760, 8=1171,170, C=224,410
Naphthalene C-10, N-8						0.6555	N/A			0.0151	0.0019	114,22	2 Option 1
Toluene						0.0028 0.3651	N/A			0,0013	0,0000	128,16	6 Option 2: A=7.1463, 8=1831.571, C=211.821
Xylene (-m)						0.1446	N/A H/A			0.0448	0.0068	74.13	Option 2: A=6.9540, B=1344.800, C=219.480
Xylene (-o)						0.0798	H/A				A AAAS	100.17	7 Option 2: A=7.0090, B=1426,266, C=215.110 7 Option 2: A=6.9980, B=1474.679, C=213.690
Xylene (-p) "Paraxylene"						0.1088	H/A			0.0448	0.0009	104.14	6 Option 2: A=7.0206, B=1474.403, C=217.773
Gasoline RVP 13 with Sinclair	SEP	58.75	51.48	66.02	51.12 ;	5.3582/	H/A	N/A	62.437				
Benzene						1.1278	H/A			0.0166	0.0044	76.11	Option 2: A=6.9050, B=1211.033, C=220.790
Ethylbenzene						0.1039	N/A	H/A		0.0207	0.0004	106.17	7 Option 2: A=6.9750, B=1424.255, C=213.210
Gasotine (RVP 13)						6.6746	H/A	H/A		0.7043	0.9775	62.00	Option 4: RVP=13.00, ASTH Slope=2.5
(n-) anaxaii						1.8518	H/A			0.0181	0.0070	86.17	Option 2: A=6.8760, B=1171,170, C=224,410
Naphthalene C-10, H-8						0.5558	N/A			0.0151	0.0017	114.22	2 Option 1
Toltiene						0.0023	H/A H/A	***		0,0011	0.0000	128,14	6 Option 2: A=7.1463, B=1831.571, C=211.821
Xylene (-m)						0.1240	N/A			0.0712 0.0418	0.0012	107 13	Option 2: A=6.9540, B=1344.800, C=219.480
Xylene (-o)				•		0.0679	N/A					104, 17	7 Option 2: A=7.0090, B=1426.266, C=215.110 7 Option 2: A=6.9980, B=1474.679, C=213.690
Xylene (-p) "Paraxylene"						0.0931	N/A			0.0448	0.0009	104,14	6 Option 2: A=7.0206, B=1474.403, C=217.773
Gesoline RVP 13 with Sinclair	OCT	52.97	47.63	58.91	51 12	4.7880	N/A	22.14	62,408				
Benzena			*****		41.16	0.9578	₩/A			A A188	A AAA A	78 11	Option 2: A=6.9050, B=1211.033, C*220.790
Ethylbenzene						0.0846	N/A			0.0100	2000	104.11	7 Option 2: A=6.9750, B=1424.255, C=213.210
Gasoline (RVP 13)						5.9700	H/A			0.7043	0.9789	62.00	Option 4: RVP=13.00, ASTH Slope=2.5
llexane (-n)						1.5887	H/A	_		0.0181	0.0067	86.17	Option 2: A=6.8760, 8=1171.170, C=224.410
Isooctana						0.4443	N/A	H/A		0.0151	0.0016	114.22	2 Option 1
Haphthalene C-10, H-8						0.0017	N/A	,		0.0013	0.0000	128.16	6 Option 2: A=7.1463, A=1831.571, C=211.821
Tolúene Xylene (-m)						0.2642	N/A			0.0972	0.0060	92.13	Option 2: A=6.9540, B=1344.800, C=219.480
Xytene (-o)						0.1013	N/A			0.0448	0.0011	106.17	7 Option 2: A=7.0090, B=1426.266, C=215.110
Xylene (-p) "Paraxylene"						0.0550 0.0759	N/A			0.0349	0,0004	104,17	7 Option 2: A=6.9980, B=1474.679, C=213.690
							H/A			0.0448	0.0008	106, 16	6 Option 2: A=7.0206, B=1474.403, C=217.773
Gasotine RVP 13 with Sinciair	HOA	46.96	42.88	51.04	51.12	4:2480	H/A		62.377				
Bentene Ethylbrazona						0.8042	N/A			0.0188	0.0040	78.11	Option 2: A=6.9050, B=1211.033, C=220.790
Ethylbenzena Gasolina (RVP 13)						0.0679	M/A	N/A		0.0207	0.0004	104, 17	7 Option 2: A=6.9750, B=1424.255, C=213.210
Hexaue (-U)						5.3018	N/A			0.7043	0.9803	62.00	Option 4: RVP=13.00, ASTM Slope=2.5
staumten f. 691					•	1.3486	H/A	M/A		U.0161	0.0064	86.17	Option 2: A=6.8760, 8=1171.170, C=224.410

TANKE PROGRAM 2.0 EMISSIONS REPORT - DETAIL FORHAT LIQUID CONTENTS OF STORAGE TANK, CONT.

Mixtura/Component	Honth	-	Blures		Liquid Bulk Temp. (deg f)	Vapor	Pressures Hin.	(psia) Hax.	Vapor Hol. Velght	Liquid Hass fract.	Hass	Hol . Velght	Basis for Vapor Pressura Catculations
isoctana			****			0.3341	H/A		******	0.0151	0.0013	114.22	Option 1
Nughthatene C-10, H-8						0.0013							Option 2: A=7.1463, 8=1831.571, C=211.821
Tulimne						0.2171				0.0972			Option 2: A=6.9540, B=1344.800, C=219.480
Xylene (-m)						0.0816	N/A	N/A		0.0448			Option 2: A=7.0090, B=1428.286, C=215.110
Xylene (-a)						0.0436		-			0.0004		Option 2: A=6.9980, B=1474.679, C=213.690
Xylena (-p) "Paraxylena"						0.0410					0.0007		Option 2: A=7.0206, B=1474.403, C=217.773
Gasotine RVP 13 with Sincials	DEC	43.27	40.11	46.44	51.12	3.9415	H/A	H/A	62.359				
Beuteun						0.720	N/A	H/A		0.0188	0.0038	78.11	Option 2: A=6.9050, B=1211.033, C=220.790
Ethylbenzena						0.0591	l R/A	H/A		0.0207	0.0003		Option 2: A=6.9750, 8=1424.255, C=213.210
Gusotine (KVP 13)						4.922				0.7043			Option 4: RVP=13.00, ASTH Slope=2.5
Hexane (-n)						1.2167				0.0181			Option 2: A=6.8760, #=1171.170, C=224.410
tsooctane						0.2499				0.0151	0.0012		Option 1
Naphthalene C-10, H-8						0.001	-	-		0.0013	0.0000		Option 2: A=7.1463, 8=1831.571, C*211.821
Totuene						0.1919				0.0972	0.0053		Option 2: A=6.9540, B=1344.800, C=219.480
Xylena (-m)						0.0717		_		0.0448	0.0009		Option 2: A=7.0090, B=1426,266, C=215,110
Xylene (-o)						0.0380				0.0349	. 5		Option 2: A=6.9980, 8=1474.679, C=213.690
Yulana (-a) "Paravulana"						0.0532				0 044A	0.0007		Option 2: 4=7.0206. 8=1474.403 E=217.773

TANKE PROGRAM 2.0 EMISSIONS REPORT - DETAIL FORMAT DETAIL CALCULATIONS (AP-42)

Honth;	January	February	March	April	Hay	June	July	1 airgus	September	October	November	Decesi
Rim Seat Losses (lb):	38.0587	46.2615	55.1481	60,5505	64.0764	66,8004	68.8375	64,4855	57.7789	50.8708	44,5675	39.33
Seal factor (lb-mole/ft yr (uph)^n);	0.2000	0,2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.20
Average Wind Speed (mph):	8.0	9.0	10.0	10,0	9,5	9.0	8.4	8.2	8.2	8.3	8.4	8
Seal-related Wind Speed Exponent:	1.00	1.00	1.00	1.00	1.00	1.00	1,00	1.00	1.00	1.00	1.00	1.
Value of Vapor Pressure function: Vapor Pressure at Daily Average Liquid	0.0763	0.0824	0.0884	0.0970	0.1080	0.1189	0.1312	0,1259	0.1129	0.0982	0.0851	0.07
Surface Temperature (psia):	3.872699	4.136069	4.387805	4.740655	5.174414	5.582791	6.028335	5.840124	5.358184	4.788045	4.247987	3.9414
Tank Diameter (ft):	60	03	04	60	60	60	60	03	60	60	60	
Vapor Hotecular Weight (ib/lb-mote):	62.354010	62.370754	62.385600	62,405315	62.427701	62.447303	62.468029	62.459484	62,436579	62.407870	62,377482	62.3585
Product fuctor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1,0000	1.00
Withdrawal Losses (1b):	14.6710	14.6710	14.6710	14.6710	14.6710	14.6710	14.6710	14.6710	14.6710	14.6710	14,4710	14.67
Het Throughput (gal/month):	4854530	4854530	4854530	4854530	4854530	4854530	4854530	4854530	4854530	4854530	4854530	48545
Shell Clingage Factor (bbl/1000 agft):	0.0015	0.0015	0.0015	0.0015	0,0015	0.0015	0.0015	0,8015	0.0015	0.0015	0.0015	0.00
Average Organic Liquid Density (lb/gsl);	0.0000	0,0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00
Tank Dismoter (ft):	60	40	66	60	64	60	60	03	60	60	60	
Roof Fitting Losses (lb):	280.0168	342,3668	410.4566	450.6660	475.5676	494.3683	507.6690	475.0137	425.6117	374.9456	328,6802	289.594
Value of Vapor Pressure function:	0.0763	0.0824	0.0884	0.0970	0.1080	0.1189	0.1312	0.1259	0.1129	0.0982	0.0851	0.077
Vapor Molecular Weight (ib/lb-mole):	62.354010	62.370754	62.385600	62,405315	62.427701	62,447303	62,468029	62,459484	62.436579	62,407870	62.377482	62,35851
Prochict factor:	1,0000	1,0000	1.0000	1.0000	1,0000	1.0000	1,0000	1.0000	1.0000	1.0000	1.0000	1.000
lot, Roof fitting Loss fact.(lb-mole/yr):	706.3198	799.2734	893,1371	893,1371	846.0948	799.2734	743.3885	724.8350	724.8350	734.1070	743,3885	715.572
Average Wind Speed (mph):	8.0	9.0	10.0	10.0	9.5	9.0	8.4	8.2	8.2	8.3	8,4	8.
				٠,	loof fitting	g Loss Facto	OFB					
Roof fitting/Status			Qui	intity I	(fa (lb-mot	e/yr) Kfb	(lb-mole/(yr mph^n))	#	•		
Vacum Breaker (10-in, Diam, Well)/Weighte	ed Mech. Acı	tuat fort, Gas	ik.	1	1,20	0.17	7	1.00				
Unstatted Guide-Pote Well/Ungasketed Slid		•		1	0.00	67.00	o c	0.98				
Roof teg (3-in. Diameter)/Adjustable, Doub	ble-Deck Roc	ots	1	10	0.25	0.0	7	1.00				
Roof Orain (3-in, Diameter)/Open				1	0.00	7.00		1.40				
Kim Vent (6-in. Diameter)/Weighted Hech.	Actuation, (iask.		1	0.71	0.10		1.00	-			
Gauge-Hatch/Sample Well (8-in, Diam.)/Weig			Gask	1	0.95	0.14		1.00				
Gauge-Flout Wall (20- in, Dlam,)/thibolted (1	2.30	5,9		1.00				
						777	_	••				

0.00

554.32

525.89

0.00

575,84

591.18

0.00

554.17

498.06

440.49

387.92

343.60

Access Natch (24-In. Diam.)/Buited Cover, Gasketed

332.75

403.30

480,28

Total Losses (lb):

TANKE FROGRAM 2-0 EMIBBIONS REPORT - DETAIL FORMAT INDIVIDUAL TANK EMIBBION TOTALS

Honths in Report:

January, February, March, April, May, June, July, August, September, October, November, December

	tosses (the	1.);			
	Fotal			Total	
Liquid Contents	Wi Chdravat	Roof-Fitting	#im-Seal	Standing	Iotal
Gaseline RVP 13 with Sinciair	176.05	4854.96	656.77	5511.73	5687.78
Bentene	3.31	20.62	2.79	23.41	26.72
£thylbenzene	3.64	2.03	0.28	2.31	5.95
Gasoline (RVP 13)	124.00	4750.74	642.67	5393.41	5517.41
Hexana (-n)	3.19	32.63	4.44	37.27	40.45 -
Isooctane	2.66	7.69	1.04	8.73	11.39
Haphthaleno C-10, H-8	0.23	0,00	0.00	0.00	0.23
Talmene	17.11	29.60	4.00	33.61	50.72.
Xylene (-m)	7.89	5.27	0.71	5.98	13.86
Xylene (-o)	6.14	2.23	0.30	2.54	8.48
Xylene (-p) "Paraxylene"	7.89	3.95	0.53	4.48	12.37
lotal:	176.05	4854.96	454.77	5511.73	5487.78

ATTACHMENT E

EPA AP-42 "Interim" Process Fugitive VOC Emission Factors

NEW EQUIPMENT LEAK EMISSION FACTORS FOR OIL & GAS PRODUCTION OPERATIONS

August 1995

The U.S. Environmental Protection Agency (EPA) evaluated data on equipment leak emissions from the oil and gas production operations gathered by the American Petroleum Institute. Based on the analysis of the data, EPA is providing interim average emission factors from leaking equipment at oil and gas production facilities. These interim measures are acceptable to EPA from a technical standpoint for immediate use to estimate emissions from leaking equipment.

Since State/local programs may experience some transition time to accommodate new factors, the EPA suggests that any contemplated use of these factors in the near term for submitting information for trading, offsets or netting, 15% plans, or modelled attainment demonstrations, and regulations associated with these programs, be coordinated with the State in which the source is located.

If you have any questions please call David Markwordt at (919) 541-0837 (FAX 0942).

Average Emission Factors for Oil and Gas Production Operations (kg/hr/component)

(sample size is indicated in parentheses)

Fquipment Type		Heavy Oil		Wâter/Light Off ^a
Comector	2.0E-04	7.5E-06	2.1E-04	L.IE-04
	(36.622)	(7.538)	(74.634)	(2-451)
Fiange	3.9E-04	3.9E-07	L-LE-94	2.3E-96
	(11.356)	(3.213)	(23.581)	(677)
Open-Ended Line	2.0E-93	1_4E-04	L.4E-03	. 2.5E-04
	(1.030)	(439)	(2.578)	(123)
Otherb	8.3E-03	3.LE-05	7_5E-03	L.4E-02
	(536)	(194)	(954)	/92)
Pump	2.4E-03 (71)	NA	1.JE-02 (162)	2.4E-05 (17)
Vaive	4.5E-03	8.4E-06	2.5E-03	9.SE-05
	(11.752)	(2.073)	(23.723)	(724)

^{*}Water/Light Oil emission factors apply to water streams in light oil service with a water content greater than 50%, from the point of origin to the point where the water content reaches 99%. For water streams with a water content greater than 99%, the emission rate is considered negligible.

The "other" equipment type includes compressors, dispirants, drains, dump arms, hatches, instruments, meters, pressure relief valves, polished rods, relief valves, and vents.

NEW EQUIPMENT LEAK EMISSION FACTORS FOR

PETROLEUM REFINERIES, GASOLINE MARKETING , AND OIL & GAS PRODUCTION OPERATIONS

February 1995

The U.S. Environmental Protection Agency (EPA) evaluated data on equipment leak emissions from the petroleum refining, gasoline marketing, and oil and gas production operations gathered by the American Petroleum Institute and the Western States Petroleum Association. Based on the analysis of the data and incorporation of comments from industry and state and local air pollution control associations, EPA is providing interim emission correlations to estimate emissions from leaking equipment at refineries, gasoline marketing facilities, and oil and gas production facilities. Additionally, average emission factors for marketing terminals are provided. These interim measures may change based on additional input from state and local air pollution control agencies and industry, but are acceptable to EPA from a technical standpoint for immediate use to estimate emissions from leaking equipment.

Since State/local programs may experience some transition time to accommodate new factors, the EPA suggests that any contemplated use of these factors in the near term for submitting information for trading, offsets or netting, 15% plans, or modelled attainment demonstrations, and regulations associated with these programs, be coordinated with the State in which the source is located.

The new equipment leak emission correlations require plant specific data to use in conjunction with the equations provided below. For situations where plant data is not available, estimates must use the existing average factors for leaking equipment from the document "Protocol for Equipment Leak Emission Estimates," EPA-453/R-93-026, June 1993 or the marketing factors provided here. The methodology and supporting appendices used to develop the factors presented below are available on the OAQPS TTN bulletin board (see files: leaks.meth, leaks.A, leaks.B, and leaks.C under Chief/AP42/Q&A). If you have any questions please call David Markwordt at (919) 541-0837 (FAX 0942).

Marketing Terminal Emissions Factors

(based on 17 Marketing Terminals, rec. October 1994, calc. January 1995)

Equipment: Type:	Equipment Service:	Sample-Size	Average Emission Factor (kg/fir)	Alg Eniss's
Fitting (connectors	Gas	1.894	4.1E-05	9.05-S
and flanges)*	Light Liquid	42.172	7.3E-06	1.7 E-5
Other (compressors	Gas	LSS	I_2E-04	2.6E-#
and others)	Light Liquid	2.258	L.3E-34	2.9E-4
Prant	Light Liquid	777	5.JE-04	1.2€-3
.,,	Gas	873	!.3E-05	2.9 € -5
Vaive	Lieix Liavid	27.989	4.JE-05	<i>7.5⋶-</i> 5

a "Fixtings" were not identified as flanges or connectors; therefore, the fitting emissions were estimated by averaging the estimates from the connector and the flange equations.

22041 16/g.